

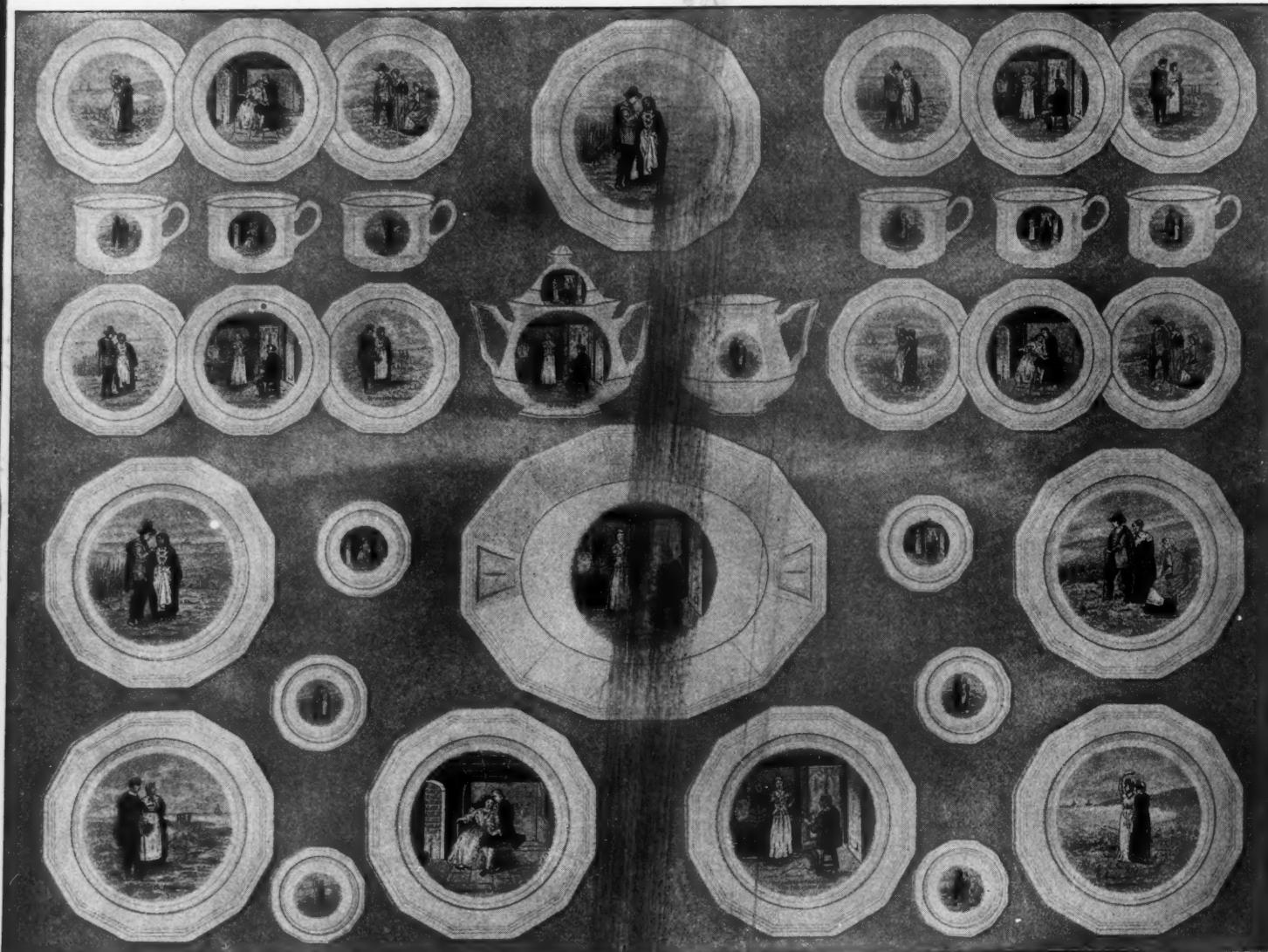
# GREEN'S Fruit Grower

"A MAGAZINE WITH A MISSION"



FEBRUARY, 1912

# Shall We Ship You This Handsome Set of Dishes?



## THE MAYFLOWER DINNER SET. "Ye Colonial Shape."

PATTERN USED A HUNDRED YEARS AGO (REPRODUCED).

**Decoration**—The decorations are those characters from Longfellow's Immortal Poem, "The Courtship of Miles Standish," the most beautiful love story in American history. The trimmings are in Imperial Blue. "Speak for yourself, John," remarked the beautiful Priscilla as she deftly wound the yarn from the hands of John Alden, who, deeply in love with her himself, was pressing the suit of his friend. What an inspiring lesson to every American is the story of these rugged pioneers.

**Description of the Mayflower Ware**—The illustrations used in manufacturing the first or original set of these dishes cost several thousand dollars. This ware is the celebrated "Sterling China Ware." It is snowy white and very durable. The decorations are burned into the ware and will not wear off. This elegant thirty-five piece Mayflower dinner set will be sent to your address when complying with the conditions named below as follows:

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We will send you the above book containing 256 pages if you will send us two new subscribers to Green's Fruit Grower at 35 cents each. What the Book contains:—Forms of Acknowledgments, Forms of Affidavits, Banks and Banking, Bills of Exchange, Bookkeeping, Building and Loan Associations, Commercial and Legal Business Forms, Commercial Arithmetic, Contracts, Carpenters' Rules, Different Kinds of Deeds, Drafts, Due Bills, Employer and Employee, Examples of Business Letters, Facts for Builders, Forms of Guaranty, How to Collect Debts, Legal Points Concerning Interest, Landlord and Tenant, Letters of Credit, Buying and Selling Lumber, Coins of the United States, Mortgages, One Hundred Facts and Forms of Promissory Notes, Parliamentary Rules, Practical Law and Business Pointers, Receipts, Rules for Painting, Sales of Personal Property, Swindling Schemes: Good Goods Swindle, Three Card Monte, Shell Game, Envelope Trick, Bunco, Swindling Contracts and Note, Liability of Railroad and Express Companies, List of Principal American Trusts, Rules for Measuring Land and Town Lots, Tables Showing Value of Foreign Money, Miscellaneous Table of Things, Distances, Books, etc., Religious Views of the Presidents, Weights and Measures, and much other valuable information.



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# GREEN'S FRUIT GROWER

A Monthly Magazine for the Fruit Growing Farmer and His Family

CHARLES A. GREEN, Editor

Volume 32

ROCHESTER, N. Y., FEBRUARY, 1912

Number 2

## Meeting of the New York State Fruit Growers at Rochester, N. Y.

Reported for Green's Fruit Grower.

About five years ago there was a split in the Western New York Horticultural Society, which at that time was the only horticultural society in New York State. Through dissatisfaction among the members a large number withdrew from the Western New York Horticultural Society and organized a new society to be known as the State Fruit Growers Association.

Both the old and the new associations have been marvelously prosperous. The old association has largely increased in membership and the membership of this new association is 1183.

reputation which our country as a whole is securing in the markets of the world.

### A SPEECH-MAKING BANQUET.

This new fruit growing association has done something not undertaken by the old association in attempting successfully to induce over six hundred members to attend a banquet in the evening during the sessions. At these banquets interesting and practical speeches are made by practical men from this and other distant states, many new acquaintances are made, as naturally occurs where men are seated at table. Possibly one of the great advantages of these banquets is

State Senator Henry M. Dunlap, of Illinois; "The Social Environment of the Farm," Rev. T. Maxwell Morrison; "The Conservation of the Home," Mrs. Dunlap; "Long Time Investments," C. R. Scoon, Geneva; "Fruit Exhibits," Professor Morris A. Blake, New Jersey Experiment college, New Brunswick, N. J.; "A Closer Trade Relation Between the Producer and the Consumer," State Commissioner of Agriculture Raymond A. Pearson.

There is something connected with the breaking of bread in company with our fellows which leads us to be communicative. It is natural to talk while we are eating and likewise healthful to talk under such circumstances. One of the best places to get acquainted with people is at the dinner table, therefore this gathering of fruit growers together at a banquet was a fortunate innovation and Green's

### ROUND TABLE DISCUSSIONS.

So far as I know these round table talks originated with the Western New York Horticultural Society and they have prevailed for many years at each meeting. After the convention is opened and some of the more important papers have been read, the members who are particularly interested in grapes are invited to adjourn to a certain room where practical grape culture will be taken up for discussion by a man especially informed on the subject of grape growing for family use and for market. Likewise announcement is made that those interested in peach growing will have a round table conference in another room, and those especially interested in apple culture a round table in another room, and so on. As these gatherings of the round table are smaller gatherings than those in the main convention hall, individuals who may

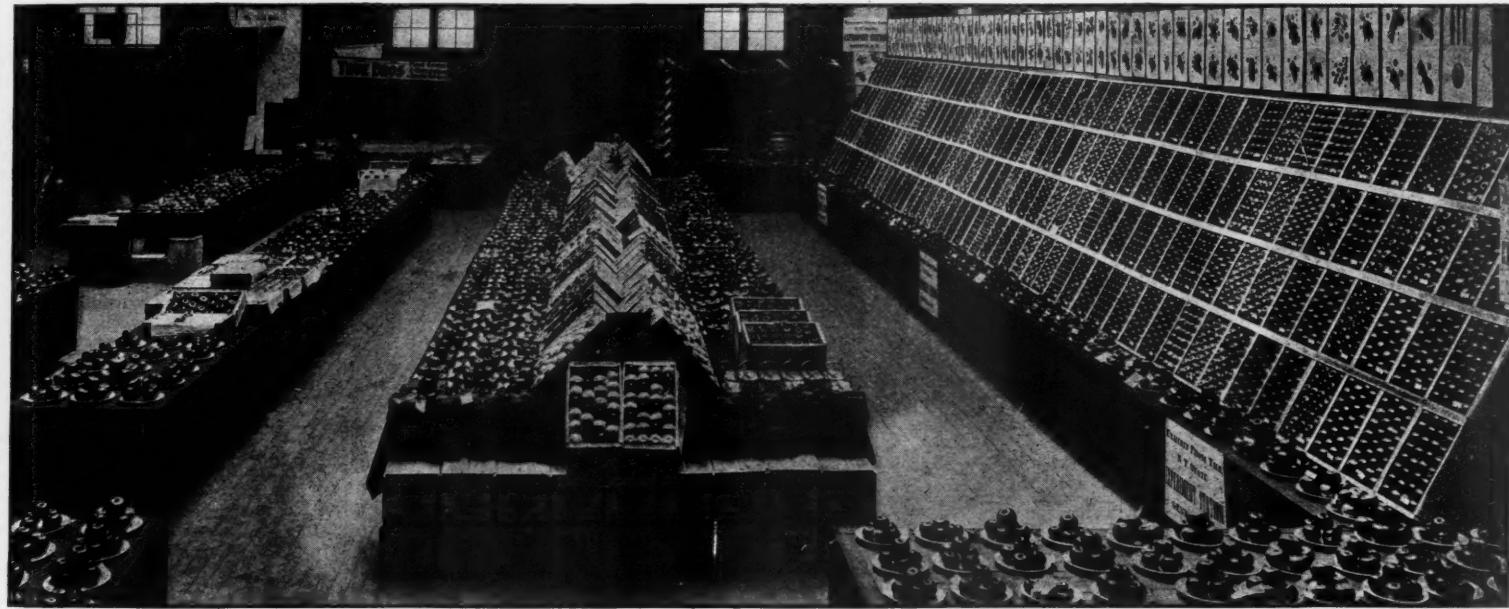


Exhibit of New York State Apples as shown in Convention Hall, Rochester, N. Y., at the New York State Fruit Growers' Convention.

There is now a friendly feeling between the two associations as indicated at the recent session by an invitation to W. C. Barry, president of the old association, to address this new association.

Both societies are deeply interested in the progress of fruit growing and are doing all they can to promote this great industry. Many who are members of the old association are also members of the new association.

It would seem almost like duplicating the work of the old association to have the new society convene in Rochester, N. Y. a few weeks previous to the gathering of the old society in the same city, but results have shown that there is room for two societies, therefore let us conclude that it is best it should be so.

Both exhibitions are held in the same large public hall, known as Convention Hall, and both societies always have a large exhibit of spraying devices and other horticultural and agricultural tools and implements and a large exhibition of the beautiful fruits grown in New York State.

New York State is the early home and center of fruit growing and of the nursery business. There was a time not many years ago when New York State was looked upon as the one favored fruit growing section of this country and as the center of the nursery interests. Now there are other localities competing, more especially in fruit growing than in the growing of nursery products, but still the Empire State is unwilling to yield the palm to any rival locality in fruit growing. So far as bulk of fruit is concerned, and good quality and good flavor, Western New York still takes the lead, but as regards the production of carloads or train loads of fancy fruit of remarkable size and color, there is little doubt that some of the western states are taking the lead for the present, but we of New York State continue hopeful that by improved methods we will be able to produce in time as large a percentage of fancy fruit as any locality in the world.

The competition in growing beautiful high grade fruit is a friendly one. Fruit growers of the east are not envious of those successful fruit growers who have accomplished such marvelous results in the western states, but all glory in the

the interchange of views and experience between members as they sit along side or opposite practical men at dinner. Here are the speakers and their subjects at this banquet:

W. H. Jordan, director of the experiment station at Geneva, was toastmaster. The speakers with their subjects follow: "The Relation of the City of Rochester to Fruit Interests About It," Charles E. Ogden; "The Farmer and the State,"

Fruit Grower suggests that other horticultural societies adopt this measure of making the members better known to one another and of adding interest to the annual gathering. The Western New York Horticultural Society has followed the lead of the newer organization and this year announce a banquet in connection with their annual gathering which will occur Thursday, January twenty-fifth.

have remarks to make may be heard and practical questions are discussed in sort of a family gathering way, therefore here is something that I would recommend other associations to adopt.

The round table on grapes was conducted by F. E. Gladwin, of Geneva, who explained the results of three-year investigations on the Fredonia state experimental vineyard.

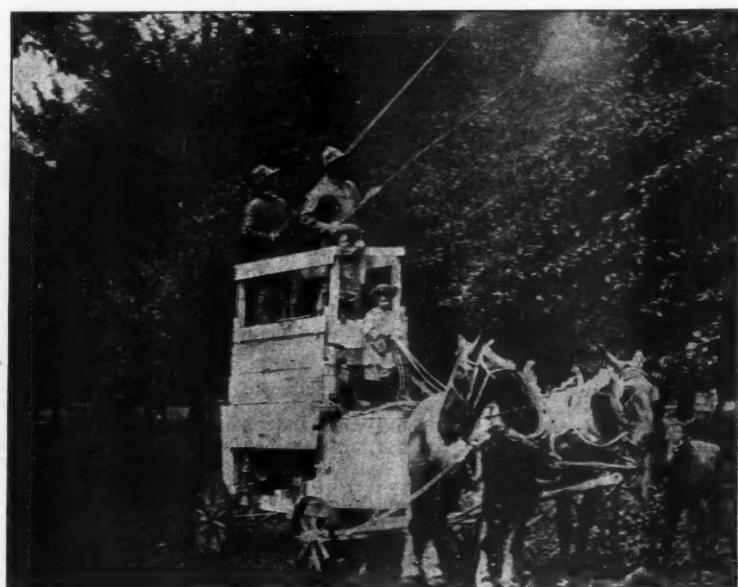
F. E. Hartzell, of the station, spoke on "The Control of Grape Insects," alluding especially to the grape leaf hopper, the rose-bug and the root-worm.

The afternoon round table on small fruits was led by O. M. Taylor, of Geneva. Samuel Fraser, of Geneseo, spoke on "Growing Currants," and A. H. Clapper, of Dundee, on "The Black Raspberry." "The Importance of Pollination in Strawberry Blossoms," was discussed by B. Katkamier, of Macedon.

### HOBBIES IN APPLE PRODUCTION.

"An apple orchard may resist the attacks of disease. Some years there are few insects or fungi, so that spraying is not so much needed. A farmer frequently gets good results from some one of the four factors mentioned, and becomes so impressed with its importance that he makes a hobby of it to the exclusion of all others. But the most successful apple grower is the man who keeps a proper balance between all four agencies and does not expect good care in one respect to make up for neglect in other ways."

"To this add thinning, and a better epitome of the subject would be hard to find. The first orchard reclaimed by modern methods by me contained 100 trees set out in 1870, thirty Baldwins, forty Hubbardstones, seven Kings, twelve fall varieties and eleven assorted winter varieties. I purchased this orchard in the spring of 1903; it had previously received fairly good care and was recognized locally as a good orchard. Spraying had been neglected by the former owner. The previous yield for five years had been about 100 barrels annually. Since and including 1903 the annual yield has been: 1903, 287 barrels; 1904, 460; 905, 206; 1906, 323; 1907, 340; 1908, 335; 1909, 353; 1910, 235; 1911, 494, making a nine-year average of 337 barrels.



Spraying the apple orchard at the farm of P. K. Hartigan, Middleport, N. Y. Here is a spirited scene, the full sunshine falling upon the spraying equipment and upon the foliage of the thrifty apple trees. This is a rough and ready handmade spraying tower propelled by a gasoline engine. There are many different forms of power sprayers used in Western New York, most of them are made in factories. I should not attempt to make a sprayer if I could find one ready made, as such machinery can be made at a factory much cheaper than parts can be purchased and put together on the farm.

Do not forget that the man who grows perfect fruits must have some form of spraying device. Even the farmer who does not grow fruit must have some kind of sprayer for his potatoes and some of the other crops. But the fruit grower cannot do a successful business without spraying and machines. The question is what kind of a spraying device should the fruit grower purchase? If he has an acre of orchard, and an acre of grape vines and other small fruits, he may not need a gasoline power sprayer, but can get along with a sprayer propelled by the man's strength. But if you have an orchard of five, ten, fifteen or more acres you cannot get along without one of the best power sprayers offered in the market. It is not for us to say whose make of sprayer is the best. Possibly there is no best, any more than there is a best breed of poultry or a best variety of apple or pear, but there are very many excellent spraying devices. Now is the time to correspond with manufacturers and select a sprayer, if not already provided for.

The annual receipts have averaged \$758.36. I might mention that the fruit of the forty Hubbardston trees, a single acre was sold from the orchard for \$800, and that the 1911 yield from the same trees exceeded 1,000 bushels."

A large number of other orchards purchased by Dr. Lattin were mentioned in statistical form. Continuing the doctor said:

"The average annual yield per acre from all my Orleans county apple orchards has been 117 barrels; the annual returns per acre for the several years was, \$326; the average annual returns per tree, \$8.15; annual average net profit per acre, has been, in round numbers, approximately, \$150. The average yield per acre before I took them over was twenty-seven barrels per acre."

#### BOOSTS WESTERN NEW YORK.

"The Western New York fruit sections possess a climate, soil and location unequalled in the world. I would have made a greater profit than that indicated had I not been in the habit of selling from the orchard each year instead of waiting until spring, keeping the fruit in cold storage, at which time the fruit was often sold at much higher prices.

An important resolution on the enactment of a law to correct the evils of the commission business, was passed, with a view to presenting an early bill to the Legislature. The committee appointed was H. W. Collingwood, of New York City; L. L. Morell, of Kinderhook; J. R. Cornell, of Newburgh; J. H. Hepworth, of Marlborough; W. Wadsworth, of Kinderhook; and S. C. Gillett, secretary, ex-officio.

#### TO PAY OFFICERS' EXPENSES.

Secretary Lloyd T. Tenny said in a general question - and - answer session, that he doubted if ever the time would come when there would be over-production of fancy fruit, but if ordinary, lower grade fruit was grown extensively in place of the other kind, there undoubtedly would be overproduction.

Commissioner R. A. Pearson, who holds the belief that New York State is second to none as an apple and general northern fruit country, told of the great exhibition in New York city where the state scored heavily in fruits.

#### NEW STYLE PACKAGE.

Next attention was attracted by a new style of package, originated by Samuel Fraser, of Fall Brook, the Wadsworth farms, Gennessee. The package is of fiber board, 9 by 12 by 27 inches, containing twelve pasteboard boxes which in turn contain twelve greening apples each. Each case contains about a bushel and they are designed to fit into freight cars in such a way that no space is lost.

About 600 cases can be placed in a car. The cases also may be shipped conveniently by express. Arriving at the point of consignment they may be opened for display or boxes may be sold at retail without unpacking the rest.

#### SECRETARY'S REPORT.

The secretary's report besides showing the growth of the association, dealt with the Eastern meeting at Poughkeepsie, and the summer meeting at Hilton, which Mr. Gillett especially praised on account of the splendid entertainment afforded and the thoroughness with which preparations had been made.

The report calls attention to the winning of first prize at the State fair. It had not been intended to make an exhibit, but the executive committee finally decided to accede to the request of Commissioner W. Barry Murphy.

"The list of our sales is a good thermometer or index of what the trend of the spraying operations of our fruit growers are," said Mr. Gillett. "A very few years ago we sold to our members more than two carloads of copper sulphate. Last year, I sold four barrels, and I imagine that was mostly for potatoes. We sold nearly double the amount of dry sulphur that we did in 1910, and more than double the amount of arsenate of lead. The sale of fertilizers dropped off again this year. The financial report showed receipts of \$6,287.22 and disbursements of \$2,187.76.

#### NEED OF CO-OPERATION

Mr. Tenny's subject was "Success and Failure in Co-operation." He dwelt upon the need of co-operation in the Eastern states, explaining the underlying principles essential to the success of any system of the kind. Farmers must have a common ground and feel the need of co-operation, he declared. "The greatest improvement before us," said Mr. Tenny, "is in methods of grading. These will not be possible without co-operation."

The four principles necessary to successful operation said the speaker are, first, the recognition of the common need, second, the organization of an incorporated body, not dependent on a loosely formed agreement valueless in case of trouble; third, the money paid in for capital stock must be on a non-profit-sharing basis, the organization not run to make money on the actual investment, merely through the markets which it opens up; fourth, signed contracts made between the central organization and the individual members, not allowing each merely to promise shipments.

Any community, said Mr. Tenny, which does not practice co-operation, is backward to that extent. "The farmer will make more money, under co-operative systems, it is true; but the improvement will not stop there. Better schools will be maintained and libraries and reading-

to regard the sacredness of parenthood or the nobility of labor. The speaker thought a national bureau of domestic science at Washington a need.

#### PRIZE SPEAKING CONTEST.

A proceeding of interest was the speaking contest, in which five Cornell students of agriculture took part. There is a prize of \$50 awarded by the association. The winner was H. B. Knapp, of Port Byron; second F. E. Rogers, of Canandaigua.

W. H. Hook, of Waterville, the first contestant, spoke on "Progressive and Aggressive Fruit Growing." He said that lack of care in their work was common to fruit growers, and that to neglect apple trees was bred in the bone. There was a need for better thinning, grading and packing.

H. B. Knapp, in his talk on "Better Packing and Grading of Eastern Fruit," said that the moisture supply was a fundamental and vital consideration. He pointed out that the East was ahead of the West in the nearness of markets and that competent authorities had stated that the Western districts could not excel the Lake Ontario fruit growing area. If the local growers would improve in grading and packing they would easily outstrip the Western competition. Fine results were obtained by the Western apple growers in thinning and the Eastern growers should follow suit.

soil must also be sought, thus admitting sunlight and air, which contain elements of plant food. The method of stirring the soil was undoubtedly the best but deep ploughing when the orchard was in fruit tended to disturb the feeding roots. Senator Dunlap said that in his orchards he used the disc harrow until the early part of July and afterward the smoothing harrow or other shallow cultivator.

#### Let Us Spray.

"Experiments made at the Ohio Station showed a net profit from spraying an average sized tree from 12 to 20 years old throughout one season, at a total cost of from 30 to 40 cents, of from \$3.00 to \$7.00 or more when apples are worth \$1.00 per bushel. With apples selling at a higher price the profit from spraying is much greater than this. Perfect apples are worth more than wormy ones. No man who is trying to grow apples can afford not to spray. Spraying is an insurance to his crop, but the work must be thoroughly done at the right time. It will pay." —A. B. Graham, Ohio State University.

#### Spraying "Pointers" to be Remembered.

(1) Spray Thoroughly—Every leaf and fruit must be coated with a thin film of spray to be protected. Timeliness and thoroughness are more important factors in the control of diseases and insect pests than are the particular mixtures of poisons used.

(2) For nearly all fungous diseases spray before rains, not after. Fungous spore are scattered and germinate during rains, seldom after. Protect the plant by having the mixture on when the rain comes. Bordeaux or Lime-sulphur does not wash off easily. When spraying for insect pests alone apply the mixture after rains.

(3) Use a Nozzle that Gives a Fine, Misty Spray.—The finer the spray and the greater the pressure with which it is thrown the more effective the work will be. A very fine mist forcibly applied covers the leaf with a thin film which adheres, while even greater applications of spray applied in coarse drops may be less effective: —First, because it is not so evenly distributed and second, because there is much more danger of the larger drops running together and dripping off the leaves.

High pressure also tends to drive the mixture in among the leaves thus touching the lower leaves and more effectively coating both sides of the leaves which is very important.

Two things are therefore necessary: First. A pump which will give you a working pressure of not less than 100 pounds.

Second. A fine spray nozzle which will produce the misty spray.

It frequently becomes necessary, in order to reach the highest foliage on tall trees, to use long lengths of hose or extension pipes. We advise the extension pipes and the Vermorel, Dewey, Tiger, Niagara or Winkler mist nozzles for this purpose.

(4) Spray every season. It is impossible to determine in advance whether or not the plant or tree will be attacked. Proper spraying is never injurious.

(5) Don't spray only the trees from which you expect to get marketable fruit. Spray all the trees, otherwise the trees you spray early in the season may become infected later by the unsprayed trees. "An ounce of prevention is worth a pound of cure."

(6) Don't put your sprayer away after using it until you have thoroughly cleaned out all the spraying mixture. If this is left in, the pump will be injured and the glands and valves clogged.

(7) Don't leave your sprayer where it will freeze, unless all the liquid has been drained from it. If the liquid is frozen in the pump, it is liable to break or expand the cylinders so the pump will not work.

"For the great men are modest, because they continually compare themselves, not with other men, but with that idea of the perfect which they have before their minds." —Milton.



Here is the photograph of a spraying outfit in use in Minnesota. Notice that the men who are spraying stand upon the ground, being able to reach the upper branches by a long extension rod attached to the spray nozzle. If the apple trees shown in this photograph were fully grown it would not be possible to reach the top branches from the ground. In that case the owner would be obliged to erect a standing platform over the wagon platform, in which the men who were spraying could stand, which platform could be raised to the height of six, eight or nine feet, according to the height of the trees. Notice that four men are employed here, which is more than is ordinarily employed in spraying. Often two men do the work in a satisfactory manner. In this photograph one man is employed in driving the team, and one other in managing the gasoline, engine and the other two in spraying.

rooms will be established. The farm will be more attractive, and the farmer boys will stay there and the city fellows will want to come there to live."

#### OVERCOMING CIRCUMSTANCES.

While co-operation is largely for the purpose of obtaining the highest attainable price, it is also to overcome circumstances. In Southern California farmers united to bring in water for irrigating purposes, long before uniting for selling purposes. In the West where irrigation has made land very valuable and intensive farming almost necessary, the conditions have practically forced the specializing in certain sections, and this of course gives rise to co-operation. Failure may come through over jealousy of the farmers or through poor management, said the speaker, and care should be taken in the selection of business managers, who should not be dependent upon profits of the association for compensation, but upon a liberal salary.

Mrs. H. M. Dunlap, wife of a state Senator of Illinois, who is an extensive grower of apples, opened the afternoon's speaking with an address on "A Balanced Relation for Man." Mrs. Dunlap referred to the comparatively early age at which many prominent men die in this country. President Harper, of Chicago University, was cited as an instance. The speaker argued that if people knew the proper manner of living their lives might be prolonged.

Mrs. Dunlap emphasized the duty of parents to their children along industrial lines. The chief of police of Chicago has stated the the increase of crime was among persons between the ages of 12 and 20 years. These had not been trained

#### BOOKKEEPING FOR FARMER.

F. E. Rogers, who carried away some of the original prize, spoke on "The Importance of Bookkeeping for the Farmer." This showed the farmer where he was most successful and what branch of his business to increase. Three-quarters of the problems of the fruit grower were those of business.

E. A. Brown, of Elmira, speaking on "The Importance of Better Grading of Apples in New York State," said that Western fruit would drive the Eastern out of the market unless the better methods of the West were followed. The grading and sorting could be relied on in the case of the Western dealers while there was much dishonesty in the East.

People would pay the high price when they were satisfied that they were getting what they paid for. He recommended the Canadian law in regard to the marking of boxes and barrels with the name and address of the grower, variety and grade.

#### POINTS ON APPLE GROWING.

Henry M. Dunlap, state senator of Illinois, speaking on "Factors Essential to Success in Apple Growing" emphasized the importance of varieties. Each locality had its own specialty in apples and it was important to learn what variety was best adapted to the soil and climate, he said: Planting was also of importance, the age of the tree and the distance apart were factors to be considered.

Cultivation could be obtained by the usual implements or it could be induced by surface mulching if the provision for ample moisture were safeguarded, Senator Dunlap said: Mellowness of the

### Insect Pests, How to Detect and Fight Them.

The San Jose scale sucks the juices from the inner bark and does not eat the surface. It stunts the growth and may even cause the death of limbs, and perhaps the whole top. This injury is due to the injection of a toxic substance into the tissue of the bark. Fortunately trees will recover from this injury, even when far advanced, if the scale is killed, says Orchard and Farm.

Treatment.—The lime-sulphur solution is now conceded to be the best remedy for the San Jose scale.

Spray the orchard sometime during the winter with lime-sulphur solution (any time between the falling of the leaves and the opening of the blossoms).

The commercial solution of standard strength (33 to 34 degrees Baume) should be used not weaker than one part of the solution to nine parts of water. The home-made solution should be used as per formula given in here.

Choose a period of dry weather for spraying. Best results are obtained when there is a week or more of dry weather after the application. The lime-sulphur solution acts slowly and scale may continue to die for a month or six weeks after the application.

The work should be done very thoroughly. Aside from unfavorable weather conditions lack of thoroughness has been found to be the most fruitful source of failure. It is not sufficient to cover the limbs with a fine mist like deposit, but the tree must be drenched with the wash to insure contact with every portion of the bark surface.

### THE GREEDY SCALE.

Recognition—The greedy scale, sometimes called the willow scale, is found on a great variety of trees and shrubs. It is seldom abundant enough to injure trees, but may cause some of the leaves to hang over winter on badly infested pears. Dwarfed growth and die-back apples have in certain cases been attributed to this scale.

The insect is larger than the San Jose scale and more elevated in structure. Upon removal of the scale the body is seen to be yellow, but averaging considerably larger than the San Jose scale. The insects are seldom located so close together as to form a continuous crust, but at times may be found in this condition. The scale is usually found around the buds and upon the small twigs.

A thorough application of lime-sulphur solution preferably just after the leaves have fallen and the second shortly before the buds open in the spring. Or, use distillate emulsion at from six to eight per cent. some time during the winter, but preferably just before the buds open. The application should be very thorough and directed especially at the small twigs where the scale is mostly located.

The use of strong distillate emulsion or mechanically mixed oil is not unattended by danger to the trees. Care should be taken to see that the root crown is not injured. If much wash runs down the trunk the wet earth should be removed shortly after the application. The oil may have the effect of reducing the amount of the first foliage, but the fruit crop will not be injured.

### THE OYSTER-SHELL SCALE.

Recognition—The adult female of this species is covered by a dark colored, long, tapering scale which is curved near the small end. These scales are often found quite abundantly upon the trunk and large limbs as well as the smaller branches and twigs of apple trees, and may remain in position several years after the insects have died. A good way to determine the presence of living insects with this or other scales is to press them against the bark with some small hard instrument and note if any juices are squeezed out. The wet stain against the bark is quite easily seen. The Oyster-shell scale passes the winter in the egg state so the shells will be found to be filled with eggs rather than the bodies of the insects.

Treatment—This scale insect is seldom abundant enough to require treatment, but when so give two applications of lime-sulphur solution as for the greedy scale, but be sure to give the trunk and limbs a thorough drenching.

### THE TUSSOCK (HORNED) CATERPILLAR.

Recognition—The egg masses of this moth are to be found on all portions of the tree during the winter. These egg bunches are about the size of a pea, of light gray to brown color, and somewhat fuzzy. Hatching commences in the early spring, even before the leaf buds are open and continues for several weeks. The young caterpillars eat the buds, foliage and also the small fruit. The apple is most commonly attacked. The injury to the fruit results in a rough scar which may greatly mar the appearance of the apple.

Treatment—When this caterpillar is giving trouble the egg masses should be thoroughly picked off during the winter,

as this is at present the most practical means of control. Success depends upon the thoroughness of the work, and it is often necessary to go over the trees two or three times to get satisfactory results. Sometimes almost no eggs will be found, even when the caterpillars were abundant the preceding spring. Such a condition indicates that natural enemies have reduced the pest to a point where it will not prove troublesome.

### THE PEACH WORM.

Recognition—The peach worm is the larva of a small moth. This insect winters over in the bark of the twigs and small branches. About the time that first blossoms appear, the worms open up their burrows and begin to search for food. At this time the expanding leaf buds are attacked and frequently killed. Young shoots two or three inches in length will frequently be seen to wither up and die, and a worm will be found to have burrowed in at the base. These wintering over worms soon come into maturity and transform into moths which give rise to a second generation about the middle of May. The second generation worms make numerous small burrows in the twigs and finally enter the fruit, thus causing the greatest damage.

Treatment—The worms remove the coverings of their burrows when the blossom buds are expanding, and so may be reached at this time by a contact spray. The lime-sulphur solution has been found to be very effective when used just as the first blossoms are opening, or slightly earlier. Use full winter strength. The treatment does not endanger the fruit crop.

### THE WOOLLY APHIS.

Recognition—This insect belongs to the plant louse family and attacks apple trees only. It is found both in the roots and tops. This aphid winters over on the tops as well as the roots, and the top infestations are principally from colonies that have lived over above the ground. The top form is not found generally distributed over the tree during the winter, but is confined to small colonies sheltered by rough places in the bark.

The woolly aphid is large enough to be readily seen, and develops in compact colonies, which during the summer may be very numerous and distributed over many of the small branches. The most characteristic feature of this species is the production of a white substance in white filaments which adhere to the body, forming a wool-like protection. The injury caused by the aphid consists of a drain on the sap and in injection of a toxic substance which causes swellings to appear on the attacked portions, especially the roots. Also, when the top form is abundant, the excretion of a gummy honey dew mars the appearance of fruit and tree.

Under certain soil conditions, the woolly aphid may seriously damage the roots, stunting and sometimes killing the tree.

Treatment—We have demonstrated that the thorough disinfection of the tops during the winter will greatly check the aphid the following season. The distillate emulsion spray referred to under the greedy scale will do the work, but such thoroughness is required that it is doubtful if the average grower can successfully apply the method. It is necessary to wet all the colonies hidden in cracks and crevices in the bark, and in our experiments, 20 gallons of spray was used per tree.

When the root crown is infested, remove the earth until the first roots are exposed and then pour in several gallons of strong tobacco decoction. In general, the best results with the woolly aphid are to be obtained by spraying during the spring and summer with tobacco decoction or a nicotine spray.

### THE GREEN APHIS.

Recognition—The green aphid is an apple pest and attacks young or rapidly growing trees most frequently. This plant louse is on the trees in the egg stage during the winter. The eggs are laid by the last generation of lice during the late fall and early winter months, and may be found on the young twigs, especially those that have grown late in the season. The eggs are small, shiny, black bodies, pointed oval and about twice as long as broad, and are laid lengthwise against the twig. Green aphid eggs are large enough to be seen without the aid of a glass, but more readily with one. Where the eggs are abundant, there is a distinct musty odor given off, especially when crushed by drawing the twig through the fingers. The green aphid eggs hatch in the spring. All the individuals are females and quickly mature, giving birth to numbers of living young. Some of the lice develop wings, thus enabling them to spread rapidly.

This aphid attacks the young growing shoots, preferring the stem portion rather than the leaves, but the foliage

may also be infested. The attacked leaves are curled somewhat, but not so markedly as with the leaf curling aphid (another species). The lice are bright green in color, but some individuals may be of darker shades. They, like other aphids, suck the juices by the insertion of a sharp beak, and do not eat the surface tissues. Considerable honey dew is excreted and affords a good medium for the growth of the black smut fungus. Badly attacked trees are often quite black before fall, and on this account the species is sometimes called the "black aphid."

The injury to the tree consists in the dwarfing of the young growth by the excessive drain on the sap, and probably also by the injection of a toxic substance. Also, the excessive growth of black smut fungus which may appear on the honey dew excretions.

Treatment—Under certain conditions the application of lime-sulphur solution when the leaf buds are bursting, will effect partial and perhaps complete control. The eggs are not killed by the spray, but if dry warm weather prevails during the time of hatching, the young lice are injured by the sulphur vapors given off by the spray deposits. The weather conditions required for the proper action of the lime-sulphur solution may not be met in the Coast localities, so the application of this spray frequently gives poor results. It may then be necessary to rely on spring and summer treatment with tobacco decoction as for the woolly aphid.

### THE LEAF CURLING APHIS.

Recognition—This aphid also attacks apples, but its presence on the trees during winter has not been demonstrated. The species is believed to pass the winter in other vegetation.

The curling leaf aphid is mentioned here because it is frequently mistaken for the green aphid. It is a spring and early summer form, not being present after the month of June. The leaves are very badly curled by this species, which seldom attacks the stems, but remains on the under sides of the leaves. The fruit on the branches attacked sets very profusely, but is stunted and rendered worthless. The injury is due to the injection of a toxic substance into the plant tissue.

Treatment—No winter treatment is known to be effective, and the only recourse is the use of tobacco or nicotine sprays during the spring and early summer.

### RED SPIDERS (MITES).

Recognition—Prunes and peaches may be badly damaged. Mites are present on the trees during the winter in the egg stage. In the case of the almond red spider (*Bryobia*) the bright red eggs may be so numerous as to make distinct patches of color on the branches, and even the trunks of the trees. Where less numerous, the eggs will be found mostly on the small twigs. The eggs are quite round, but rather too small to be seen individually without the aid of glass.

Treatment—We have demonstrated that the thorough disinfection of the tops during the winter will greatly check the aphid the following season. The distillate emulsion spray referred to under the greedy scale will do the work, but such thoroughness is required that it is doubtful if the average grower can successfully apply the method. It is necessary to wet all the colonies hidden in cracks and crevices in the bark, and in our experiments, 20 gallons of spray was used per tree.

When the root crown is infested, remove the earth until the first roots are exposed and then pour in several gallons of strong tobacco decoction. In general, the best results with the woolly aphid are to be obtained by spraying during the spring and summer with tobacco decoction or a nicotine spray.

### THE SCAB.

Recognition—The scab is a fungus disease of apples and pears. The fungus is present on the trees during winter, but cannot be observed by ordinary means of observation. In the spring and summer it develops on the foliage and fruit, producing brown, sooty spots. The blossoms may also be attacked and killed before the fruit can set. Fruit attacked by the scab is often much deformed and marred in appearance as well as quality. The scab is dependent on frequent rains during the spring for its development. The apple scab is very subject to weather conditions. The pear scab is more hardy, however, and may be expected to some extent every year.

Treatment—Winter spraying with lime-sulphur solution greatly checks the scab, especially on pears. The treatment is most effective when applied just as the leaf buds are opening. Use full winter strength and spray as for San Jose scale. One treatment can be made to answer for both complaints. Winter spraying great-

ly aids in scab control and may be sufficient, but when weather conditions are especially favorable to the development of the disease, should be supplemented by spring applications of the Bordeaux mixture.

### MOSS.

Recognition—The vegetable growth on the bark of trees commonly called "moss" is well known to practically every one. This growth is not a true moss, but comprises the several species of lichens. These lichens consist of a combination of two plants, a fungus and an alga. The fungus is dependent upon the alga, but the latter plant may be grown alone. Lichens are not dependent upon the body on which they grow, but derive their nourishment from the air. Growth takes place only during rains or when the air is saturated with moisture, hence moss is very seldom seen on trees in dry climates. Lichen growths are sometimes very abundant on trees in the coast climates, but so far no direct injury has been traced to them. Some claim that a hide-bound condition is produced, and it is probable that insect and fungus diseases may be harbored by the lichens. The Italian pear scale is a case in point.

Treatment—The lime-sulphur solution Bordeaux mixture and distillate with lye, as used in regular spraying, will all kill moss, so special treatment is unnecessary where applications for other troubles are made. A dilute lye solution is probably the simplest remedy for moss where it is unnecessary to treat for other diseases. Use six pounds of soda lye to 100 gallons of water.

### THE PEACH LEAF CURL.

Recognition—This fungus disease is confined to the peach, some varieties being much more troubled than others. There is no evidence of the disease on the trees in the winter, but it appears shortly after the development of the leaves in the spring. The young foliage becomes distorted and thickened, losing its normal green color, and varying from pale yellow greens to grey and even pinkish shades. The diseased leaves soon fall, and where the attack is bad, the young fruit also.

The peach leaf curl, like many other fungus diseases, is dependent upon wet weather for its best development and will not appear in dangerous amounts when there are no rains after the buds open.

Treatment—The Bordeaux mixture or lime-sulphur solution applied during the winter will control the leaf curl. The best results are obtained when the application is made just as the buds are swelling. The lime-sulphur wash, as applied for the peach worm, is also effective. When no winter treatment has been made, the disease can be checked by an application of Bordeaux after the foliage has developed somewhat. The application usually causes the falling of most of the leaves present at the time of spraying.

### THE PEACH BLIGHT.

Recognition—This fungus disease causes the death of small twigs and is often accompanied by the exudation of gum from the diseased tissue. In bad cases, all the early growth may be killed including the blossom buds. The disease is not easily discovered during the winter, but becomes evident as soon as the young growth starts. This fungus is also dependent upon wet weather in the spring for destructive development. Up to the present time, the peach blight has done very little damage in the Coast districts, but is much more serious in the interior valleys.

Treatment—The spores of this parasite are germinated by the first winter rains, and the fungus soon penetrates the bark of the small twigs, where it is comparatively immune to spray applications. On the other hand, if the trees are sprayed before the rains, the spores will be prevented from germinating. Spray with the Bordeaux mixture in the fall or early winter, not later than December 15th. The lime-sulphur solution has also proved of value in the control of the blight, but is not considered so effective as the Bordeaux mixture.

Gather the rubbish and burn it.

### The Need of Spraying.

Prof. John Craig, of Cornell Agricultural Experiment Station says:

"The annual loss arising from the incursion of destructive insects in the United States exceed many times the yearly output of all the gold mines in the United States. The reduction in the value of the apple crop of New York State due to insect injury, cannot be less than thirty per cent. per year. This is a heavy tax on the fruit growers. The injury, however, could be lessened at least fifty per cent. by an expenditure of not exceeding two per cent. on the value of an average apple crop. The need for spraying is therefore evident. This need will probably increase as times goes on."



## Fruit Helps

By Prof. H. E. Van Deman,  
Associate Editor.



### Spraying Suggestions.

When we look back to the days when some of the oldest of us were boys and remember the state of the fruit business it is simply amazing to note the difference between the conditions then and now. We had few insect pests and fungus troubles compared with the present but we had some that were bad enough and what we did have we thought we must endure, or very nearly so. We fought the tree borers to some extent and scorched some of the caterpillars from the branches where they were feeding, and we jarred off some of the curculios. But for the most part we bore with their ravages the best we could. We had bitter rot and scab on the apples, the pear trees had the blight and we were so puzzled about its cause and waisted so much time discussing it at random that we finally declared a blockade against all who attempted to make a speech on the subject. I can clearly remember when we sullenly abandoned all hope of raising the Catawba grape because of its almost utter destruction by black rot.

How is it now about all these things? There is not one of them that we do not fully understand the life history of if we are at all up to date and we know how to fight them with success and at reasonable cost. We have other and newer enemies that have come upon us in the way of insects and fungus diseases but these are not mysterious nor are we ignorant of the means of at least their partial destruction. Applied science has done all this for us. The mere theorists have given way to the practical scientists. They are the fast friends of and coworkers with the humblest toilers in the practical fruit growing. They have devoted their lives to the solution of the problems that confront us and there are few of them that have not been solved up to date. The cause of peach yellows has not been scientifically explained but the means of its utter destruction has been discovered and accomplished wherever proper steps have been taken. The problem of the destruction of the gypsy and browntail moths is a hard one and so is that of the cotton boll weevil but they are being fought with all the skill and other means that can be brought against them.

### INDEFINATE WORDING.

While spraying is a great help to the fruit grower it is a vague and indefinite term and is often but poorly understood by those who attempt to do the practical work. There are so many different enemies to fight with the spray pump and they have so many and such diverse habits and physical characteristics that it is a study that demands the brightest minds and unlimited patience and perseverance to destroy them. Some cannot be destroyed but only kept in comparative subjection. This is far the more common case with both the insect and fungus enemies and we should fight upon this basis and be always prepared to continue the warfare to the end even should it never come. The spray pump and all that goes with it are as much a part of the equipment of a fruit farm as the plows and cultivators and they need to be used with even more judgment and faithfulness. One can spray with the wrong remedies at wrong times and in an improper manner. Some or all of these mistakes are often made and others too. To go about it intelligently one must study the whole subject in all its details, for upon attention to the details depends the success or failure of the operation.

Fortunately we are not thrown upon our own resources for information as to what are the true causes of our troubles and what to do and when to do for each one of them. The national government and the State Experiment Station agricultural colleges have publications that meet about all our requirements in this direction and there are officials who will gladly serve us by personal letters and by visits in cases of need. It is our own fault if we do not avail ourselves of all these opportunities. They are ours for the asking. And the rural press is in touch with the latest ideas on this subject and they may be before us at all times at small cost.

### TWO DIVISIONS OF SPRAYING.

In a general way there are two great divisions of the subject and of the practical work. One is that of spraying for the destruction of insect enemies and the other for those of vegetable or bacteriological nature. For a considerable time it

was thought that the remedies for one were entirely ineffective for the other: that arsenical preparations were, almost universally, the specific remedies for the insects and copper solutions those for the fungi and bacteria. And, indeed, they were almost the only preparations that were effective in fighting the two classes of enemies. But in the course of various efforts to combat them new remedies were invented, and notably the lime-sulphur mixtures, which were found to be, in many cases, as good for fungus diseases as for the insects for which they were originally intended. Indeed, for some fungus troubles the lime-sulphur is better than the copper sulphate remedy. And the arsenate of lead, which was supposed to be only effective on insects by poisoning them internally was found to be of material benefit to the fungicidal preparations. Thus the discoveries have been made, some by deliberate experiments and some by accident.

One mistake that is made by those who have not studied into the reasons for the use of the various spray remedies for insects is, that they sometimes apply

this and other liquid mixtures needed for different troubles and all this must be studied out. The lime-sulphur preparations also vary. Some may be bought ready made and there are better if made at home. And there is fire cooked and self-boiled lime-sulphur washes. Each has its uses and they differ in cost and effectiveness.

### WHAT WE ARE TOLD TO DO.

Now I have not given the details of any of the troubles or specific directions for making any of the preparations to combat them, nor have I told when or how to go about applying them, nor the best kinds of pumps or nozzles to use. All these or only a very few of them would occupy ten times the space allotted to my editorials. And as others will treat some of the divisions of the subject in detail it would be a duplication for me to do it. What I want to impress upon the readers is to get at the bottom of their particular troubles and the ways to overcome them. This can only be done by study. It is nonsense to simply get a lot of chemicals and tools to use them with and spray at random. That sort of work has done considerable damage in many instances and failed to correct the evils. And it has discouraged those who have tried it and perhaps others who knew about it from doing spraying that would have been beneficial. Begin right now to study into the details of anything that is not clearly understood, with a view to being on the spot at the right time and with the right material to do whatever spraying may be necessary. Get all publications that will be helpful and study them carefully. Attend the farmer's institutes and ask questions. Tell others what you have done either good or bad

selling apples in large cities from N. Y. to western Minn.

Are McIntosh apple trees generally prolific bearers?

What are the seasons in N. Y. of Wealthy and McIntosh apples?—John Osburn, Minn.

Reply: Yellow Newtown, Esopus Spitzenberg, Grimes, Jonathan, Northern Spy and Winesap are six of the highest priced apples that are sold in the large markets but none of them are suitable for growing in Minnesota anywhere. Only the very hardiest varieties can be grown there and even these will not succeed in all parts of that State.

McIntosh apple trees are usually good bearers.

Wealthy ripens in September in New York and McIntosh is an early winter apple tree.

A. C. McGraw of Michigan wants to know if it would benefit his bearing apple orchard to plow up the sod now in it and cultivate the ground.

Reply: It would surely do the trees good to plow under the grass and till the ground during the growing season. The fruit will be better in every way except color, beginning with the year the culture begins. This has been most thoroughly tested by the New York Experiment Station and proved beyond a doubt to be true, especially as to yield and size of the apples. No doubt it will work equally well in Michigan.

Prof. H. E. Van Deman:—I have one pear tree 10 or 12 years old that has never borne while others set out at the same time have been bearing 5 years or more.



A view near the entrance of Highland Park of a hill side planted to various kinds of evergreens, over the tops of which may be seen a distant view of the city of Rochester, N.Y. This beautiful park is located near the residence of the Editor of Green's Fruit Grower. Evergreens have an advantage over all other ornamental trees owing to the fact that they are as beautiful in winter when other trees are leafless as they are in summer. Evergreens are like the birds which stay with us all winter, while nearly all the other companions have left us. Evergreens are more difficult to transplant than ordinary trees, and must be handled with greater care, owing to the fact that they are always in full foliage, and if exposed for a short time in the field after digging or in transplanting or in planting they are liable to perish. Do not make the mistake of buying and planting large evergreens for they are far less liable to live than smaller trees.

the arsenicals to the wrong class. Arsenic is a poison that works internally and should be applied to foliage that is likely to be eaten. It will not kill insects that suck their food through tiny tubes which they thrust through the outer covering of vegetation, as do the plant lice and the scale insects. They must be killed from the outside by something that will penetrate their coverings, such as the oils and caustic materials.

Another very important matter to have clearly in mind is the need of doing the spraying at the proper time or times. There must be no delaying or the work will be useless or very largely so, and it is equally important that it must not be done too soon. Insects and fungi have their seasons of activity and rest. Sometimes they are open to destruction and again they are not. We must catch them at the critical stage for them. For instance, the peach-leaf-curl must be sprayed for just as the buds are opening. The oyster shell bark louse must be sprayed when the young insects are but recently hatched and are crawling about to find places to locate. In that stage they are very tender and unprotected by their scale coverings and easily destroyed. To know these and many more details is absolutely essential and only the most diligent study and examination of the trees will make it plain to the fruit grower when and how to do the work properly.

How to make the liquids for spraying is another essential point. There have been thousands of batches of Bordeaux mixture made that were much less effective than they might have been and some that were positively injurious to the foliage and fruit to which they were applied. There are several strengths of

about spraying. And then above all things act as the time for each step is needed. Get the best pumps, nozzles and all appliances and the needed chemicals as well before they are needed to be used. A soldier who neglected to get his gun and ammunition before the enemy was upon him would be worsted and so will you in the fight for good fruit if you do not take the proper steps in time. Will you do it?

H. E. Van Deman.

### Answers to Inquiries.

Apples Bursting Open.—Could you give me any information as to the cause of Greening apples bursting open in the cellar?

They were very large, juicy and fine quality when they were picked, and now find several with the skin burst open half way around the center. These apples will not keep but a few days out of the cellar without turning a dark color and the flesh becoming very dry and mealy.—R. L. Harris, Mass.

Reply: It is quite probable that the cellar in which the apples are kept was to warm and caused the apples to ripen too fast. Apples should be stored in places where the temperature is as low as possible not to be freezing, and if it is damp there will be no shriveling. But moisture and a warm temperature will induce decay.

There should be every reasonable means used to put apples in storage as soon after they are gathered and to keep them at a cool and even temperature.

Editor Green's Fruit Grower.—Please name in order of prices, six of the best

The tree is large enough of its age and looks thrifty but has never had more than a few blooms. I also have several cherry trees that bloom profusely every year and drop their bloom with no cherries remaining on them. They are the May and Early Richmond varieties. The soil is rich, black, sandy loam and grows fine apples and small fruits.—G. P. Grimes.

Reply: What the variety of tree is that will not bear I could not tell. I would top graft it to a kind that will bear. The Richmond and 'May' cherry trees should bear in Missouri in good soil. Possibly there is some fungus disease that kills the fruit about the time it forms. I would spray the trees with lime-sulphur wash or Bordeaux mixture just before the buds open and note the result. Do not do this so late that the spray will touch any of the opening flowers.

Mr. Charles A. Green:—Will you be kind enough to answer through the Fruit Grower how to sprout or get young trees from black walnuts, hickory nuts and chestnuts. I have some fine specimens of above and wish to get trees of the same, especially if they will bear nuts the same as I have. Some say plant in fall and the frost will crack the nuts and in the spring they will sprout. I have only a few and want to be sure.—J. M. Smith, Conn.

Reply: Nuts should never be allowed to dry out but sometimes they can be made to grow even after they are quite dry by soaking them for several days in cold water and then putting them in the earth to lay over until early spring. They should then be planted in good soil about three inches deep.

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Mr. C. A. Green.—I have 25 pear trees all of the same kind. These trees are about 10 years old and this is the first season to bear fruit. I have been waiting a long time for it. These trees are the healthiest in the whole orchard. I am much disappointed in their quality and I am very anxious to know what to do with these trees to be of any benefit to me for the future.—Fred. C. Brunott, New Jersey.

Reply: It is very disappointing to wait ten years to learn that the trees planted bear fruit of poor quality. They may be Vicar, which is a very long conical and late keeping variety, and if so it is no wonder the grower does not like the quality. There are a few other pears of poor quality. I would advise grafting them to Bartlett, Bosc, Seckel or almost any variety that is good. There is none better than the Bosc and if scions can be had of the State Experiment Station at New Brunswick or from any reliable source I would surely graft to this variety.

Prof. H. E. VanDeman:—Please advise me in your next Edition of the Fruit Grower, how I should plant seed with hard shells like peaches, walnuts and butternuts. I have tried often and never got any to grow.—John Donahan, Pa.

Reply: Seeds with hard shells such as nuts are grown very easily if they are not allowed to dry out but put in damp sand or earth over winter and left out to be kept in as near a natural state as possible. When early spring comes they should be planted in good soil about 3 inches deep. They can be planted when the trees are to grow and all danger of loss in transplanting avoided. Peach seedlings are easily transplanted.

Prof. H. E. VanDeman:—On sandy soil, what raw materials, and about what quantities of each, would you advise of commercial fertilizers, for a lawn, and to what produce a luxuriant growth in various ornamental trees, shrubs, etc.?

Pear trees, here blight very badly. Do you think dwarf pear trees more liable to blight than standards, or not?

Will you kindly suggest a list of pears for family use, especially the least liable to blight, giving quite a variety, and if possible, covering the whole year as nearly as is, seemingly practicable?

What varieties of quince are most blight resistant? Do you think.

Many early Richmond cherries are grown here, but, I am told that "Dyehouse" is superior. As a commercial variety which do you think you would plant Dyehouse, or Early Richmond or both?

For a late cherry, commercially, would you advise English Morello, or some other. I purpose planting Montmorency Ordinaire, with an earlier, also a later variety, hence this question.—Subscriber.

Reply: Lawn grass should have an application each spring of about 5 pounds to the square rod of something that is strongly nitrogenous. Tankage and nitrate of soda mixed in equal quantities would do very well.

Dwarf pear trees do not usually blight as badly as standards because they do not grow so rank and bear succulent growth that is apt to afford lodgment for the spores of the disease. Madeleine, Tyson, Howell, Seckel, Bosc, Flemish Beauty, Louis Bonne, Lawrence and Easter will about cover the season from early to late and are as little subject to blight as any.

All quinces are apt to blight sometimes. The orange and Meech are as good as any, and Champion and Van-Deman are later kinds.

I would plant the Richmond cherry and next after it, Montmorency and for the late, English Morello or Wragg.

Reply for G. F. G.—We recently had a little question come up as to the desirability of spraying cold water on berry bushes that have been attacked by a late spring frost. The question came up as to whether it was practical to spray very early in the morning, just after daylight, and if this would prevent serious trouble from the frost. We will be very much pleased to have you advise us what you think of this plan.—W. E. Marguian.

Reply: There is no doubt that to spray cold water on frosted foliage very early in the morning, before the temperature of the air begins to rise is of some benefit in preventing injury from frost damage. This I have tried several times in a small way on garden vegetables with beneficial results.

In the Young Apple Orchard. Written for Green's Fruit Grower by Geo. W. Brown.

In the Young Apple Orchard.—There probably is no labor expended upon the farm that will bring such handsome and profitable returns as properly caring for and stimulating the growth of the young apple orchard in order to make its location and conditions permanent.

We have had the very best of success recently in growing and maintaining a young orchard, grown simply for home consumption, with a view to having its

production trend into the commercial market during seasons of heavy bearing. The young orchard just planted, needs more than just a passing recognition the first summer, and even after that season has passed, it is useless to expect the trees to gain their maturity into a profitable bearing factor unless they have the closest attention of the owner.

We believe that it is a useless waste of time, at least in our section, to plant out the young apple orchard without breaking up the ground previously to planting, giving it a thorough cultivation, firming the soil well.

When the trees are planted thus, the labor is far less than when trying to insert the roots into crowded holes among a tough sodden surface.

Then when the trees need cultivation, as they must have to govern a proper growth it is equally easy to give them the proper attention to stimulate them.

The main idea which the apple orchard grower should hold in view is to get the

subject of orchards after planting, we shall not dwell longer upon the subject of planting.

Next in importance to planting out a good line of trees comes the method of caring for this orchard.

Fence the orchard for various reasons. First, because it does not belong to the open fields, and should be enclosed with a good strong fence in order that unruly stock cannot break over and do more damage in an hour of rampage than the owner can set right in years to come.

There is nothing more discouraging to an orchardist, especially in the apple orchard, to have trees broken down and damaged by stock, and attempting to have them replaced in years to follow by transplanting. We have had some experience in this line in the past and know that it is very hard to get trees to start and take on a proper growth when broken down and hampered from injury.

Then if the orchard be fenced in, it adds to its beauty, as well as adorn-

The proper growth of the root system in the orchard is greatly different from former times. Indeed it must be different.

In early days when timber lands were plentiful, and the various belts of timber protected the trees from severe wind storms it was easy enough for the young orchardist to stick a few trees into the virgin soil and get them to grow and stand up thru a series of years, but the orchards that have during the past twenty-five years been planted out into tough sodden fields where they in a very few years become perfectly sodden bound about the base with no moisture to be gained excepting from far beneath this tough sod have been partially starved in root system and while making a fairly good top have no root system to hold them in stability, hence our high winds are blowing many hundreds of these trees out, root and branch, and we find many of the orchards of this class badly devastated over our country.

However with the present methods of starting out the young orchard we find the circumstances very much different, and the trees with such an amount of excellent root growth, and in such good form of equilibrium that the trees will withstand one of the most harassing storms without giving in to injury.

It is very proper to plant the trees quite deep, three inches deeper than when standing in the nursery row.

This gives them a good depth of foot-hold, and as well serves to prevent the suckering of the parent stock, below the root union, as they will sucker some even with deep planting, but much less than if carelessly stuck into the ground very shallow.

Our best method for the first and second years have been to plant the orchard into potatoes, sweet corn and other hood truck thus keeping every inch of the surface cultivated all season thru, allowing the trees the same cultivation as the crops about them.

In the autumn of the first year sow the orchard heavily into white rye and after a good rain in the early spring disc both ways about the trees and prepare the soil with a smoothing harrow for a crop of hood truck again thus throwing the entire surface into a high state of cultivation again the second season.

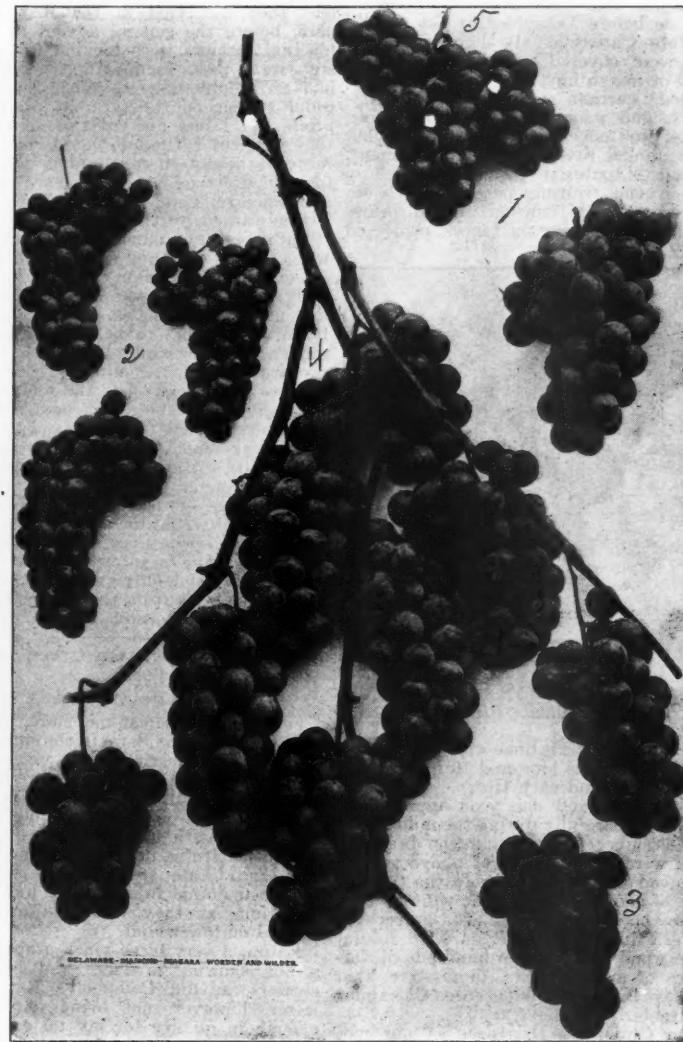
In the meantime during the winter season all the manures from the horse stable was hauled directly upon the orchard and scattered liberally about the trees, and thoroly worked in with the disc.

We must say that there is no tool upon the farm that will discount the disc harrow for working about in the orchard, providing the work is done at the right time when this tool can show its effectiveness.

This would be naturally, just after a thoroy rain when the soil is pliable and easy of cultivation, but not too moist.

The soil in an orchard need not be allowed to become so compacted that this tool will not become effective to it if care be used to attain the proper facilities.

We have many good words for this tool in working about in the young orchard. (To be Continued.)



Photograph from the Long Island Agronomist, Long Island, N. Y.—A helpful publication.

1—Niagara. 2—Delaware. 3—Wilder. 4—Worden. 5—Diamond.

The above is an actual photograph of clusters of leading varieties of grapes freshly gathered from the vines. No. 1 is Niagara, the most popular yellowish white market grape. No. 2 represents three clusters of the Delaware grape, a very early reddish grape of delicious quality, not surpassed in value by any known variety. No. 3 is a small cluster of the Wilder grape ripening about with Concord, berry very large, black and of superior quality. No. 4 represents a branch of Worden, a black grape ripening much earlier than Concord, larger berry and larger cluster than Concord, perhaps a little better in quality than Concord. This is one of the most popular black grapes known. As a market grape it will not endure shipment so well as Concord, having a more tender skin. No. 5 is a cluster of the Diamond yellowish white grape, originating with our friend Jacob Moore, now gone to his reward. This is one of the most popular white grapes, of better quality than Niagara, a little earlier than Niagara.

Those who are about to order or plant grape vines cannot do better than to study the above illustration for it gives an accurate idea of the comparative size of the berries and the clusters of five of the most popular grapes known in the United States. A grape vine may be purchased for ten, fifteen or twenty-five cents, which will be a joy forever to the planter. I have a vine of Worden grape which covers nearly two sides of the rear of my home at Rochester, N. Y. It is loaded down with delicious fruit every season. It never fails to bear a big crop of grapes. It has borne thus freely for fifteen years and will continue to bear, if no disaster befalls it, for a life time longer. Who can say that an investment of ten or fifteen cents for a vine like this is not one of the best investments that a man can make?

greatest possible growth from his trees and in the meantime have them ripen this growth sufficient during the autumn season that they will not become injured from the frosts or a rigid winter.

Life is too short for the average farmer to fritter away a goodly portion of it in lying in suspense awaiting the time to arrive for a knurled and poorly cultivated orchard to come into bearing upon his farm.

Therefore, taking it for granted that the apple orchard is to be a permanent investment, lasting from thirty to fifty years under ordinary care, the average lifetime of the now young man just starting in upon his homestead, use the best of common sense, buy the best and most thrifty trees to be secured, and from a firm that can be trusted for reliability, then plant them upon a plat that has been as thoroly prepared as the for a crop of corn, and when done make a solemn declaration that this orchard will be as thoroly cultivated in the future as a field of corn or potatoes.

As this article is intended to treat upon

ment to the farm house, and if very small pigs or calves are to be kept within its enclosure for a few weeks it may be done so.

We however, do not deem it advisable to keep any kind of stock, no matter how small in the growing orchard until it is at least five or six years old, and of sufficient maturity and growth to be well protected from injury.

Cultivation and mulching are two of the most prominent and useful themes today with the successful orchardist, and he who would grow a young orchard successfully now must throw old foggy theories aside and step into the harness with the throng of up-to-date fruit culturists who know what they are talking about when they advocate these two methods of orchard growing. They go hand in hand and we deem the former as profitable as the latter, providing properly employed in its event.

To use the breaking plow in the young orchard about the trees is little else than butchery and should not be tolerated after the soil has been once broken, and the trees planted.

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"Two years ago," she says, "I was attacked by a stomach trouble so serious that for a long time I could not take much of any sort of food. Even the various kinds prescribed by the doctor produced most acute pain.

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"But to his surprise, (and that of everybody else), I did not tire of Grape-Nuts, and became better day by day, till, after some weeks, my stomach entirely recovered and I was able to eat anything my appetite craved.

"My nerves, which had become so weakened that I feared I would become insane, were also restored by the Grape-Nuts food in connection with Postum which has become our table beverage. I appreciate most gratefully and thankfully the good that your food preparations have done me, and shall be glad to answer any letters inquiring as to my experience." Name given by Postum Co., Battle Creek, Mich.

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References—J. H. Hale, the "Peach King," or Prof. Jarvis of the Conn. Agricultural College. They will tell you there is nothing better.

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**NOTES**  
**FROM Green's Fruit Farm**

Notes from the Fruit Farm.  
Written for Green's Fruit Grower  
By E. H. Burson.

During the month of December we planted some currant cuttings and gooseberry layers, dug thousands of poplars, shrubs, etc., shovel-plowed a block of seedling stocks, run the winged cultivators through several acres of recently lined out currant cuttings and did countless other little jobs that usually must be done before December or not at all.

Before Christmas all the Strawberry beds were covered with light manure, straw or marsh hay, and all the recently planted currant cuttings, gooseberry layers, and many rows of propagating stocks, well covered with manure. This is an annual little job and takes many carloads of material.

Then the fruiting peach trees were banked and the fruiting apples, pears, etc., that were near the fences, protected

haul out in small lots the post rails and stakes, placing them upon high ground where the farmers could call and get them at any time. In some places the muck was very soft, permitting my kind old horse with one blind eye to become almost mired, but this difficulty I obviated by filling the soft places with cedar brush and other similar refuse.

It so happened, as things will often happen to those who go ahead and do the best they can, that at that particular date, before the general advent of wire fencing, farmers were looking for rails, stakes and posts for fencing, therefore I had no trouble in disposing of all the cedar timber on the farm at profitable prices. If I had not cut this timber at that particular time I would not have received nearly so much money for it, for soon after wire fencing became popular, and fence rails and fence stakes were no longer wanted by the farmers.

But if I had not found this kind of winter work in the swamp I would have found something else to do on the farm in those early days. There was fire wood to cut and prepare for the stove, fences to rebuild and ditches to be dug during the milder days of winter. The old apple orchard needed trimming. There were patches of shingles off of the roofs of the barns and other buildings, and some of the doors needed repairing and renewal of hinges and latches. The manure needed to be drawn and spread upon the fields almost daily.

But if none of these things had needed to be done I would have been busy, for I would have spent more time in reading and in searching for information on varieties of fruit and on methods of culture, the best soils for fruit, the best manner of storage and distribution.

Additional Notes from Green's Fruit Farm.

By Charles A. Green.

Few things interest me more, when I visit Green's Fruit Farm in the summer or fall, than the bearing grape vines. The vines on this day of my visit were heavily laden with beautiful clusters. The vineyard is located on a dryish knoll, inclining to the south and east. Grapes, like most other fruits, do not thrive on low or wet land. Late spring frosts or early fall frosts do not injure grapes located on elevations as they would injure those on lower land.

Eaton, a very large black grape, made a fine showing of large and beautiful clusters, as did Campbell's Early, the latter, however, not being quite good enough in quality for my taste.

Moyer, an early red grape closely resembling Delaware but earlier than Delaware, was showing a full crop, the clusters not being so large as Delaware.

Moore's Diamond, a white grape originated by Jacob Moore, showed beautiful clusters of fine quality. It ripens earlier than Niagara. Concord never fails to bear good clusters with us. Niagara vines were heavily laden with large and beautiful clusters.

Worden is one of our earlier good eating varieties. Brighton is my particular favorite as regards quality. This is one of the great varieties of the age, but it does not succeed everywhere. Its foliage is more likely to be attacked with fungus, which induces the leaves to drop, than most of our other varieties. Even with us occasionally the leaves drop before the fruit is fully ripe, but generally the Brighton ripens its fruit to perfection at Green's Fruit Farm. It is a reddish grape with pulp so tender it dissolves in the mouth. I consider it the best in quality of anything grown at our place.

Delaware is the next earliest red grape, ripening but a trifle later than Moyer. The Delaware is a marvelous grape of superior quality and will never cease to be popular.

Near the vineyard I have mentioned is a beautiful grove of sweet chestnut trees which I planted from seed nearly thirty years ago. These chestnut trees have borne fruit for ten years, increasing in productiveness each year.

No one should plant nut trees with the idea that they are going to bear profitable crops at an early age. I have a letter on my desk to day asking if pecan trees will bear a paying crop at the age of ten or twelve years. I answer No, they cannot be expected to bear a paying crop under twenty years, and possibly not so early as that.

The chestnut makes a handsome and valuable tree. A farm which has a few chestnut trees growing on it is far more attractive to members of the family than one that has no chestnuts. Every child on the place knows where the chestnuts are, and watches the trees eagerly during the latter part of summer. I advise everybody to plant a few chestnut trees.

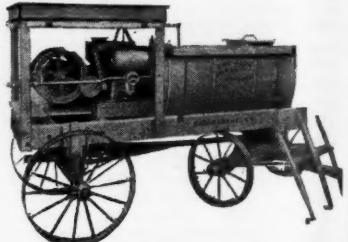
In the eastern part of this state an insect has attacked the chestnut tree and destroyed millions of dollars worth, leaving hardly a healthy tree standing. This insect is unknown in western New York.

The catalpa is an interesting tree in foliage and flower. My attention is called to it when ever I visit Green's Fruit Farm, where it is planted in single specimens and in long rows. Its branches are apt to sprawl about somewhat, therefore it should be headed back each year for the first four or five years to make it head more compactly. It is a rapid growing tree better known at the west than at the east.

The first thing I see on approaching Green's Fruit Farm is the big poplars which I have planted on the western border as a windbreak, and all the way through the northern line of the farms. These trees, though planted only twelve years ago, are now about 70 feet high and are not only useful in breaking the force of the western winds, but are possessed of remarkable beauty and give character to the place. They are planted along the high bank of a deep open farm drain. If there were tile in this drain these poplars would be objectionable as their roots would be inclined to fill up the tile and clog them.

I would not be satisfied to have a farm without having many trees put in, but I see no reason why the trees should be scattered through the fields, occupying valuable space and interfering with the cultivation and growth of many crops. At Green's Fruit Farm we plant the trees along fence lines, along the highways, along the open ditches, or other places where they are not in the way of plowing and other means of cultivation.

In order to have good fruit you must spray. To spray properly you must use a power sprayer.



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## Where Certain Varieties of Apples are Wanted.

By Professor Fraser of New York.

Yellow Transparent—This is classified as an excellent apple in Cincinnati, and by some of the men in Indianapolis, Louisville, it is regarded as very good.

Duchess—It is regarded as excellent in Buffalo, Chicago, some of the salesmen in Louisville, Pittsburgh, and as very good in Columbus, Indianapolis, Peoria, Philadelphia, Toledo and St. Paul.

Wealthy—Wealthy is generally a very good apple in reputation. The only market classifying it as poor or fair is Mobile.

Alexander—This apple is generally fairly well spoken of; it is regarded as poor by part of the trade in Boston and as a fair apple by part of the trade in Buffalo, Indianapolis, Kansas City, Louisville, Memphis, New Orleans, Norfolk, Richmond and St. Louis.

Maiden Blush—This is an apple with a good reputation, it is excellent in Baltimore, Chicago, Cincinnati, Columbus, Louisville, New Orleans, Pittsburgh, and sells well in other markets.

Twenty Ounce—It is highly spoken of in almost every market.

Pound Sweet—This apple is ranked as excellent by some of the men in Boston, Buffalo, Chicago and Detroit.

Tolman Sweet—Tolman Sweet are ranked as excellent in Boston, Detroit and as very good by part of the trade in other cities.

Holland Pippin—This is regarded as very good by Columbus, New York, Philadelphia and Toledo.

York Pippin—It is regarded as very good by Columbus, Memphis, New York, Philadelphia and Toledo.

Snow—Snow is a poor apple to send to Kansas City, Louisville, Memphis, Mobile, New Orleans and Norfolk. In fact, it is not appreciated in southern markets; it appears to be in highest esteem in Boston, Buffalo, Chicago, Cincinnati, Detroit, New York.

McIntosh—This apple is evidently not so well known as the Snow, but has established a good reputation in Cincinnati and Milwaukee.

Gravenstein—It is classed as an excellent apple in Baltimore, Boston, Buffalo, Pittsburgh. It is not wanted in most of the southern markets.

Red Astrachan—This apple is classed as excellent by some of the men in Pittsburgh and as very good by others elsewhere.

## APPLES IN EUROPE.

"In looking over the replies from Europe," said Professor Fraser, "the one important fact to note is the strong position of the Baldwin apple. It is an apple which arrives at its destination in good condition if properly handled and I believe our New York growers who have the soil to grow good colored Baldwins will make no mistake if they plant this variety. There are more Baldwins shipped to Europe than any other variety, which is one reason for the popularity of this variety. Messrs. Simons, Shuttleworth & Co., Liverpool, Eng., state that it is this large supply which creates the demand and that there are, no doubt, a great many other varieties that would sell more freely if more were shipped.

"Greening is the most popular cooking apple in London, Edinburgh and some other markets, but it does not ship quite as well as Baldwin.

"King is highly esteemed especially for the early winter trade before the Baldwin trade really opens up strong.

"Spy is highly esteemed for dessert and cooking. Its defect is that it bruises so easily and is liable to be spotted, which spoils it for the good trade. Since considerable of the fruit of a barrel show an injury this apple does not have as good a reputation as it should. It does well in Edinburgh and Dundee, 2 1/2 to 3 inch sizes being well liked. From Glasgow Messrs. Muirhead & Maxwell write, American Spies are not favorites here, these being mostly wormy, but Canadian Spies are among the most popular apples we have."

"Newton is still in excellent demand if clear and of good size. The New York fruit is so much better flavored than the far western that it is at a premium. Some salesmen think that the Newtown is over-rated. The Russets, especially the Golden Russets, are still popular. MacIntosh (Canadian grown) is establishing itself in Glasgow. The fall fruit is not in the highest esteem since it does not ship well. I think the following excerpts from letters will cover the ground well."

"Manchester wants good, red eating apples. Baldwin, Spy, King, Wealthy, Snow, MacIntosh, Twenty Ounce, Alexander, Gravenstein, (all fall apples must be clear); also Greening, if clear, and Newtown if of good quality and Golden Russet. Some men include Pound Sweet and Tolman Sweet. Wagener, if large, can be sold for grocery trade. Seek-no-

further is always in demand if of good size.

"Messrs. Woodall & Co., Liverpool, write, 'In Great Britain, it may be said that Baldwin and Greening are the apples of commerce, followed by Spies and Ben Davis, and in smaller quantities the many other varieties, the Golden Russet being a favorite. Hudson River Newtown Pippins stand in the first position as regards quality, but unfortunately they are disappearing, the fruit becoming small and scabby, which makes them of little value.'

## A Grape Vine Which Bore Apples.

Charles A. Green, Editor.—While reading an interesting copy of your valuable magazine in which you give your experience in finding fruit of a winter apple tree growing on the branch of a summer apple tree and your remarks about how little we know yet about the effect of one blossom on another blossom of plant, vine and tree life. I thought my own experience might be of some interest to your readers which is the most remarkable



case of cross breeding that has ever come to my notice. About ten years ago I was endeavoring to originate new varieties of grapes by cross breeding upon one of the seedling vines, the parent of which was under the limb of a red astrican apple tree. I found instead of bunches of grapes for the first fruit there were apples growing, these fell off however. The following year I found but one cluster of apples. These were red like the astrican, I cut them off when green with a segment of the grape vine and preserved them in alcohol. I still have them in a fruit jar as a curio. The vine was transplanted to ground that yearly overflows. It has since born a few grapes but no apples. (Age giving it the staple character of the vine through the more rapid cell multiplication from the vine nucleus rather than from that of the apple.) Enclosed you will find a photograph of the fruit which should be on record as showing the broad relationship of vegetable life.—Jesse T. Morgan, Wilkes Barre, Pa.

## Imitating G. Washington.

B. R. T. Conductor—"What's that, ma'am? I didn't quite catch what you said."

Woman Passenger (with child)—"I said you gave me too much change from that quarter. I must pay full fare for my little boy now, as he's past the age when he can ride in the cars free. Yesterday was his birthday, so please take back this nickel."

Tax Bureau Official—"Well, sir, what can I do for you?"

Prosperous Appearing Citizen—"I came down here in response to this personal tax notice. You have rated me as having \$50,000 in personal property, which is much too low an estimate. I have \$75,000 worth at the very least, and to be on the safe side you had better make it \$80,000. Errors in a matter of this sort are very annoying."

They had been having a little tiff. "Oh, of course," said he, wrathfully, "I am always in the wrong."

"Not always," said she, calmly. "Last week you admitted that you were in the wrong."

"Well, what's that got to do with it?" he demanded.

"Nothing, except that you were perfectly right when you admitted it," she replied.—Harper's Weekly.

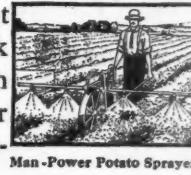
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—A genuine free trial—no money in advance—no bank deposit—no note—lowest prices—highest quality. We pay the freight. Sprayers for Every Purpose.

Let us send you one of these sprayers on trial—if it does not suit you, send it back

—if you keep it, you can pay cash or we'll wait till next fall for our money—the extra profit from spraying will more than pay for it.



Man-Power Potato Sprayer

## You Must Spray

In these days of insect and fungus pests you must spray. There is no reason for not spraying when you can get a first-class sprayer on the liberal terms we offer you. When you have spent years growing an orchard or have put out any



Man-Power Orchard Sprayer

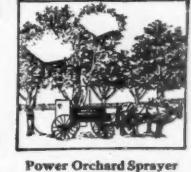
kind of a crop you cannot afford to let insect and fungus pest, deprive you of the profit you are entitled to—it's poor economy to try to get along without spraying. You can get 50 per cent. more on any market for sprayed fruit than you can for scabby fruit.

## How They Are Made

Hurst Sprayers are made by men who have had long experience in the manufacture of sprayers—practical men who know what a sprayer should be and what it should do. In buying from us you get the advantage of our 25 years'

experience. All Hurst Sprayers are made of the very best materials, have brass ball valves, brass plungers, brass cylinders, thorough agitation, develop high pressure, are easy to operate, strong and durable. Our 5 year guarantee and free trial offer proves the quality.

## Our Catalog and Spraying Guide are Free



Power Orchard Sprayer

Don't buy a sprayer until you get our big free Catalog

and Spraying Guide and our special offer of a free sprayer to the first in each locality this season. Fill out the attached coupon or send us a letter or post card to-day, telling us which machine you are interested in and get our proposition—it will save you money.

## COUPON—Fill Out and Send To-Day

H. L. HURST MFG. CO.,  
2216 North St., Canton, Ohio.

Send me your Catalog, Spraying guide and "Special Offer" on the sprayer marked with an X below.

Man Power Potato and Orchard Sprayer

Horse Power Potato and Orchard Sprayer

Fitz-All Barrel Sprayer

Power Orchard Sprayer

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MAKES  
\$5.00  
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ARE GUARANTEED  
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STRAWBERRY  
PLANTS**  
Are the best bred, best grown,  
best dug, best packed plants you  
can buy at any price, yet they  
cost no more than "average  
quality" plants.

Guaranteed free from all plant disease.  
Every plant guaranteed true to label. Strong,  
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under my personal supervision in a natural  
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produced record crops in 40 states of the 46  
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you select varieties that will give best results  
in your soil and climate.

**I'm the Strawberry Plant Man**  
Grown Nothing Else—Have 200 Acres



I care not how many berries  
you are getting per acre, if you  
use my plants you can get more.  
My Great Strawberry Book  
tells how to buy, plant, cultivate,  
market. Contains 65 sup-  
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it today. It's free.  
W. W. THOMAS, The Strawberry Plant Man,  
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**FOUR TOOLS IN ONE**

A Drill Seeder, a Hill Seeder, a Double  
Wheel Hoe and a Single Wheel Hoe are  
all combined in Iron Age, our No. 6. It  
drills accurately any thickness desired.  
Shut-off on handle, brush agitator in hopper.  
Changeable instantly from Drill to Hill  
Seeder or reverse. Digs 4 to 24 inches  
as desired. Changed to Wheel Hoe in  
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that fits the needs and purse of every  
gardener. Can be purchased in simplest  
form and added to as different attachments  
are needed. Is done perfectly all work  
after breaking up of garden. You should  
see this tool. Ask your dealer to show it.  
Write us for special booklet.

Complete line of farm,  
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**FOR MENDING HARNESS**

It takes shoes, tents, awnings, pulley belts, car-  
pet, saddles, suit cases, bungs, tops,  
thread, dash boards, or any heavy material.  
from spool and does the work of  
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machines are  
permissible for farmers.  
Agents wanted. Send prepaid  
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200 Varieties. Also Grapes, Small Fruits, etc. Best rooted  
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**LAST CHANCE FOR FREE LAND.**

There will be just such a rush for Mexican land  
this winter, as there was in Oklahoma when it was  
opened for settlement. In Tropical Mexico, the  
fertility of the soil is inexhaustible. Land that will  
grow bananas to perfection, can be got free, all  
that is required is to have five acres of bananas  
planted within five years. You can get the planting  
done by authorized Improvement Companies, on the  
installment plan, by paying \$5 a month at first.  
You do not have to go to Mexico. People living in  
the United States and Canada can get particulars  
regarding Mexican Free Land by addressing The  
Jantha Plantation Company, Block 924, Pittsburgh,  
Pa. Bananas begin bearing in about one year. The  
profit is from \$200 to \$300 per acre. Producing  
banana orchards sell for one thousand dollars per  
acre. I write this hoping that many of your readers  
may be benefited as I have been, for I think it the  
opportunity of a lifetime, and within the reach of all.

**Save Money on  
Berry Boxes and  
Baskets**

Fruit and Vegetable  
Packets  
and Growers' Supplies of all kinds.  
Write for free money-saving catalogues  
and price-list.  
Largest Factory of its Kind in the Country.  
NEW ALBANY BOX AND BASKET CO.,  
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**"KANT-KLOG"  
SPRAYERS**  
Something New  
Gets twice the results  
with same labor and fluid.  
Flat or round, fine or coarse sprays  
from small nozzles. Test on your  
trees, potatoes, gardens, whitewashing,  
etc. Agents Wanted. Booklet Free.  
Rochester Spray Pump Co., 190 Broadway  
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**A PROSPEROUS YEAR FOR FARMERS AND FRUIT GROWERS.**  
What Reform Might Accomplish.

By C. A. Green.

While the past year, 1911, witnessed a serious drought over a large portion of the country which reduced the yield of grain crops, the prices for many products has increased so that owners of farms will receive a larger reward this year than in almost any other year, according to the report of the United States Secretary of Agriculture.

It is the opinion of experts that improved methods of farm tillage are being adopted throughout this country. It would be strange if there were not advances made considering the expenditures of each state in maintaining experiment stations, in farmers' institutes and in the expenditures of the United States Government, to say nothing of the helpful work of granges and of the millions of dollars expended in fruit growing and farm papers which tend to advance the cause of agriculture and fruit growing.

Consider for a moment what would occur if each farmer in the United States should increase the yield of farm crops one bushel per acre. While this increase would be felt by the landowner himself, the increase over the entire country would be immense, something startling. No one can doubt that it is possible not only to increase the yields one bushel per acre, but even to increase them much more than that, often to double the yield per acre. These are days of economic management of all affairs.

There is more need of economy in a broad sense on the farm than elsewhere, for there is more waste on the average farm than there is in other industries such as the grocery business, mining and railroad management. The waste of manures alone on the farms of this country is appalling as is the waste owing to poor management in housing hay, grain and other crops quickly to avoid loss by exposure to storms. I appeal to every reader of Green's Fruit Grower to resolve to make the coming year a year of reform on the farm.

**FRUIT CANNING OUTPUT SHOWS INCREASE.**

**Corn Decreases 34 Per Cent., However,  
Fruits Show Gain of 16 Per Cent.,  
Apples Leading with Increase  
of 139 Per Cent.; Pears  
Fall off.**

A preliminary statement of the general results of the thirteenth census of establishments engaged in the industry of canning and preserving was issued by Census Director Durand. It contains summaries which give the general figures for 1904 and 1909, and compare the various products by kind and quantity.

**RATES OF INCREASE.**

The general summary shows increases in all the items at the census of 1909 as compared with that for 1904.

There were 3,767 establishments in 1909 and 3,168 in 1904, an increase of 19 per cent.

The capital invested as reported in 1909 was \$119,207,000, a gain of \$39,961,000, or 50 per cent. over \$79,246,000 in 1904. The average capital per establishment was approximately \$32,000 in 1909 and \$25,000 in 1904.

The value of products was \$157,101,000 in 1909 and \$130,466,000 in 1904, an increase of \$26,635,000, or 20 per cent. The average per establishment was approximately \$42,000 in 1909 and \$41,000 in 1904.

The cost of materials used was \$101,823,000 in 1909, as against \$83,148,000 in 1904, an increase of \$18,675,000, or 22 per cent. In addition to the component materials which enter into the products of the establishments for the census year, there are included fuel, rent of power and heat and mill supplies.

The value added by manufacture was \$55,278,000 in 1909 and \$47,318,000 in 1904, an increase of \$7,960,000, or 17 per cent. This item formed 3 per cent. of the total value of products in 1909 and 36 per cent. in 1904. The value added by manufacture represents the difference between the cost of materials used and the value of products after the manufacturing processes have been expended upon them. It is the best measure of the relative importance of industries.

The number of salaried officials and clerks was 7,760 in 1909 and 5,628 in 1904, an increase of 38 per cent.; their salaries increased from \$5,231,000 to \$7,863,000, or 50 per cent.

The average number of wage earners employed during the year was 59,968 in 1909 and 56,944 in 1904, an increase of 5 per cent.; their wages increased from \$16,336,000 to \$19,082,000 or 17 per cent. Since this is largely a seasonal industry, the number employed at certain periods of the year greatly exceeds the average number for the year as a whole.

The primary horse power was 81,179 in 1909 and 60,831 in 1904, an increase of 33 per cent.

**INCREASE IN CANNING AND PRESERVING.**

Of all the products, canned vegetables were put up in the greatest quantity, both in 1904 and 1909, increasing from 29,579,616 cases to 32,573,343, or 10 per cent. Canned tomatoes led with 12,883,414 cases in 1909. Peas were canned to the number of 5,873,748 cases and beans 3,274,923 cases. Corn decreased from 11,209,597 cases in 1904 to 7,447,765 in 1909, or 34 per cent.

Canned fruits increased from 4,628,241 cases in 1904 to 5,350,015, or 16 per cent., in 1909. There were 1,479,601 cases of peaches in 1909. Of apples, 1,169,730 cases were canned in 1909 and 490,341 in 1904, an increase of 139 per cent., and of apricots there were 562,811 cases in 1909 and 539,815 in 1904, an increase of 4 per cent. The number of cases of canned pears decreased from 789,120 in 1904 to 628,485 in 1909, or 20 per cent. For berries of all kinds, 792,244 cases were reported in 1909 and 489,637 in 1904, an increase of 62 per cent.

The figures for dried fruits do not include those reported from farms. The total quantity dried increased from 343,579,623 pounds in 1904 to 484,328,767 in 1909, a gain 41 per cent. Of these products, raisins are first with 195,774,767 pounds in 1909 and 121,409,881 in 1904, an increase of 61 per cent. Prunes came second with 138,498,490 pounds, in 1909.

**Insect Infested Fruit Trees.**

Written for Green's Fruit Grower  
By Robert Conover, N. J.

A tree that looks healthy makes us confident as to its longevity. In reality, such evidence is by no means conclusive. If the apparently healthy trees were inspected from time to time and treated for the first signs of pests, most of them would be preserved as healthy trees. On the contrary, trees are frequently left until the bark becomes diseased and inroads made into the sapwood, or the foliage begins to yellow, before anything is done. The tree is then so weakened that two or three years are required to regain its strength, if this is possible at

weak trees that succumb. In trees but slightly affected, however, diseased parts should be removed and the tree stimulated by enriching the soil and by cultivation.

Cherry trees often show gummy lumps on the surface where the sap has oozed. Weakness from lack of fertility will produce this condition without insect attacks.



Borers play havoc with peach trees. Look for them around its base in May or June.

If the grayish and black scales of the San Jose scale louse show on the trees the remedy must not be deferred whether the tree be large or small. The mixture of lime and sulphur is effectual on all trees of fairly smooth bark. It should be applied just as the buds are swelling. The ready-prepared mixture of lime and sulphur to be diluted with ten parts of water is convenient if there is a guarantee that it does not contain soda or caustic which would prove injurious to the tree if applied after the growth has started.

In localities where the terrapin scale—a reddish, turtle-backed scale infests trees, they will have to be sprayed in early spring with a preparation containing kerosene—the lime-sulphur does not kill it. What is known as the 25 per cent. K.-L. mixture consisting of twelve and one-half gallons of kerosene, fifty pounds of lime and thirty-four and one-half gallons of water should eradicate the pest, if applied before the buds swell. The kerosene and lime are stirred together with a paddle, and about one-third of the water stirred or churned violently with it until it emulsifies. The remainder of the water is then added and the mixture sprayed on the tree.

Peach trees that are infested with black louse on the roots should have the roots dipped in a strong tobacco infusion before being set out. Using tobacco stems in the hole where trees are to be set or spading them into the ground about trees whose yellow leaves suggest that this pest is at work is a remedy.



One should get right after any signs of scale on young trees.



Lumps of gum upon the trunk of a peach tree denotes the presence of borers.

Twig borers that attack the tender twigs of fruit trees are usually eradicated by the spray intended to correct other troubles, borers, scale, etc. Arsenate of lead in the proportion of one pound to twenty-five gallons of water is corrective.

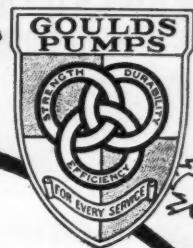
**Constant Opportunities.**

"They say that opportunity knocks at every man's door."

"Do you believe that?"

"Oh, yes; I am constantly being offered elegant chances to invest."—Louisville Courier-Journal.

When a man really thinks there is such a thing as a painless dentist you can fool him with any old thing.



## You've Got to Spray If You Want Good Fruit

You can do thorough spraying *only* with the most efficient pump and outfit. No other kind of spraying is worth while—no other spray pump is worth bothering with. That's why you should buy a

# GOULDS Reliable Sprayer

Goulds Sprayers are, first, designed to meet spraying conditions most efficiently; then, built of the proper materials to give long service and resist the action of spray chemicals. Made in all types, for hand and power.

Don't buy a spray pump because the first cost is low. A Goulds Sprayer will prove the most economical you can buy.

Send for our booklet—

### "How to Spray— When to Spray— Which Sprayer to Use"

The numerous and authentic spray formulas it contains make it of the greatest value to every crop grower.

**The Goulds Mfg. Co.**  
43 W. Fall Street,  
Seneca Falls, N.Y.

Largest  
Manufacturers  
of Pumps for  
Every Service



## Write for Free Book About The New Way of Spraying



This book tells about the new tested ways of spraying—how to banish blight, disease, prevent the ravages of insects, in less time, with less work, and half the solution generally needed. It tells what to spray and how to get the best results.

### Brown's Auto Spray

Made in 40 styles and sizes of hand and power outfit, fits meet the needs of every man and work on new, improved principles that save time, solution, trouble and mean thorough results. 300,000 fruit growers, farmers and gardeners and leading experiment stations everywhere endorse Brown's.

See Auto Spray No. 1-4 gal. capacity, hand power, with non-clogging nozzle that throws every kind of spray, easy to carry over shoulder, need least hand power, enables two men with ordinary outfit, Power Sprayers of every style and capacity for every purpose—fitted with Brown's

**Non-Clog Atomic Nozzle**  
the greatest time and money saving nozzle ever made. Practically will not clog—adjustable from fine mist-like spray to powerful stream—absolutely self cleaning. Low prices, satisfaction or money back. Write for Spraying Guide Free and full particulars.

**THE E. C. BROWN CO.,**  
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### BUCKET SPRAYER

For Home and Garden

For spraying small trees, bushes and vegetables; for white washing, washing porches, windows, wagons, etc. Iron Age No. 192 has 100 pounds steady pressure. Bronze ball valves; easiest to pack of any similar outfit on the market. No leather used. Only brass parts in contact with solution.

Same quality material as in big expensive sprayers. Its quality makes it cheap.

Ask your dealer to show you this pump. Write us today for special booklets on this and other Iron Age farm, garden and orchard tools.

**BATEMAN MFG. CO.**  
Box 160-B GRENLOCH, N. J.



**FARMWATCH-RING**  
**Land & CHAIN** WE POSITIVELY GIVE TO BOYS AND GIRLS A BEAUTIFUL, AMERICAN-MADE stem-wind, stem-set watch with handsomely designed case, polished silver, GUARANTEED 5-Year Warrant. Price \$1.00. Watch set with two sparkling stones, for selling jewelry articles at 10¢ each. Order jewelry today. When you send us your old stem-wind, we will send you a new one.

Watch and chain \$1.00

**Dale Watch Company, Dept. 29 Chicago**

**We Pay \$36** A WEEK and expenses to men with right to introduce poultry compound. Year's contract. Imperial Mfg. Co., Dept. 18, Parsons, Kan.

**WE SELL FARMS** in Oceana, greatest fruit Co. in U. S. also grain, potatoes, alfalfa, dairying. Write for list, etc. Hanson & Son, Hart, Mich.

**MARYLAND BEST IN THE UNION** THRIFTY FARMERS are invited to settle in the state of Maryland, where they will find a delightful and healthy climate, first-class markets for their products and plenty of land at reasonable prices. Maps and descriptive pamphlets will be sent free upon application to State Board of Immigration Baltimore, Md.

**LIME-SULPHUR HYDROMETER** Used By All Progressive Fruit-Growers  
Price by Mail \$1.00  
For more instructions see back page of this issue.  
CARBONDALE INSTRUMENT CO., Carbondale, Pa.

**WATCH, RING & CHAIN GIVEN AND CHAIN** For sealing thimbles and needles. We positively give a genuine American Stem Wind and Set Watch, beautifully designed case, warranted time-keeper. 5-Year Warrant. Price \$1.00. Watch set with two sparkling stones, for selling jewelry articles at 10¢ each. 20 Silver & aluminum Thimbles at 10¢ each. Paper of 100 each. Thimble. Easy to sell. When you send us your old stem-wind, we will send you a new one.

**HOME SUPPLY CO., Dept. 229, Chicago, Ill.**

**4 BUGGY WHEELS** STEEL TIRES \$8.75  
With Rubber Tires, \$10.50. I make wheels 3/4 to 4 in. tread. Tops, \$6.50. Sheds, \$2.50. Repairs, \$1.00. Axles, \$1.25. Wagons on Umbrella frame. Bay direct. Ask for Catalog M.

**SWITZ HICKORY WHEEL CO., 500 F St., Cincinnati, Ohio.**

**TREES - Low Prices Freight PAID**  
Our new catalog contains a big list of the greatest nursery bargains ever offered. Less than half agents' prices! All orders guaranteed! This catalogue will save you money! Don't buy your plants till you've read it. RICH LAND NURSERIES, Box 130, Rochester, N. Y. Rochester is the tree center of the world.

**FREE! Money-Saving Book**

**"LIGHTNING" SPRAYERS**  
AT YOUR DEALER'S OR WRITE US  
This pump quickly attached to any barrel by bolting to staves at upper end of barrel. All working parts brass, requires no priming brass ball valves and valve stems, brass paddle valves, 5-ft. 5-ply hose, brass Venetian Nozzle, throws any size spray or stream 50 feet and impossible to clog. Adapted for spraying fruit trees, white-washing houses, and other trees, and other purposes. Also 15 other styles to select from. For spraying garden vegetables, trees, shrubbery, washing wagons, windows, etc. Write for free catalog and agent's proposition on full line.

**D. B. SMITH & CO.**  
56 Genesee St., UTICA, N.Y., U.S.A.

No. 25, Fig. 300  
Bbl. Spray Pump

When you write advertisers  
Please mention Green's Fruit Grower.

### COST OF RAISING CHERRIES ANALYZED.

Record of 530 Trees Which Show a Net Return of \$60 Per Acre.

The growing number of cherry growers in northern Chautauqua will be interested in the analysis of the cost of raising cherries and statement of net returns made by C. W. Waid, of Ohio, in the Market Growers' Journal. The net income per acre, \$60 of Mr. Waid, compares rather poorly with the \$122 per acre profits reported by one of the most progressive Chautauqua county growers. Mr. Waid says:

We have just finished harvesting a bumper crop of cherries. This is a natural cherry section and while there are no large orchards, there are a great many trees, taken as a whole, as nearly every farm and many town lots have from one to a hundred or more trees growing thereon.

The money to be made from a crop of any kind is usually an interesting subject to any who is growing or contemplating growing that crop. It is not for the purpose of showing that there are big profits in cherry growing, for my figures will not show that to be the case, but that I may give the inexperienced person contemplating the growing of cherries the actual returns as we have received them to show them what they may expect under like conditions, that I give these figures.

My book shows that we have shipped 530 crates of cherries, all 24-quart crates. Some of these crates sold for \$2.25 each and others for \$2 with a few selling below the \$2 mark. The average price was not far from \$2 per crate. Thus to the person who is accustomed to reading government figures and figuring profits therefrom, our cherry crop was worth \$1,060 which is a neat little sum.

A farmer who harvests 1,000 bushels of wheat and sells it at \$1 per bushel, gets \$1,000 for his crop according to the method too frequently used to figure profits on farm products. If the wheat grower is entitled to so large profits, certainly the cherry grower is warranted in figuring his profits in the same way. This is the plan which many real estate men follow in making up their figures to show big profits. Let us see how the profits compare with the returns as given on the cherry crop.

As stated before we are in a cherry section and on that account there is no local market to speak of. It is necessary to ship the bulk of the crop to Cincinnati, Columbus or other points where cherries are not so commonly raised as in this section. The crop was so heavy here that it was almost impossible to get pickers. All growers were forced to pay two cents per quart, and even at that it took us four long weeks to get our crop off the trees. This was the first expense, which was closely followed by others. Each crate cost as follows:

Picking.....	\$. 0.48
Crate (new).....	.25
Express.....	.20
Commission.....	.20

Total.....	\$ 1.13
------------	---------

Multiply the cost per crate by the number of crates and we have \$598.90, which is the actual cost of marketing the product. Deducting this from the \$1,060, we have a net return of \$461.10, which, to most people, will be considered a fair profit.

Carlisle says there are two classes of men—one workers, the other shirkers. I suggest one more, kickers.

We say that a day is beautiful and that the night is marvelous and then straightway forget that we have been with God. C. C. Albertson, D. D.

I have been reading the essays of Hazlett, a noted English essayist whose writings are highly prized by men of intelligence. One notable thing about this book is that I do not find in it any allusion to God or Christ or the Bible, or to future reward or future punishment or future existence, which I deem remarkable.

#### A Revolution in Selling Grapes.

Today scarcely a car-load of grapes, from a crop which averages in this one section seven thousand car-loads a year, valued at from two million dollars to two and a half million dollars a year, is sold on commission. The crop is sold in a very large part through one cooperative shipping association owned, operated and controlled by the growers. Some dealers who do not want to do business with this company send buyers to the leading stations and buy there for cash, and a few individuals in the belt buy for cash and sell in the city markets.

The Chautauqua and Erie Grape Company of New York, says National Stockman and Farmer was organized in 1892, at the Chautauqua and North East Grape Union. Meetings were held throughout the grape belt, addresses made, the situation gone over, preliminary organization formed, school district meetings held,

and finally the entire section canvassed by school districts, in order to perfect the organization. The company is very simply organized. It is incorporated for ten thousand dollars, but only a part of the stock has ever been issued. No dividends have ever been paid. In addition to stockholders there are contract growers. Some changes have been made since the original organization, the concern now being the Chautauqua and Erie Grape Company, the townships of North East and Harbor Creek in Pennsylvania having withdrawn. The contract growers of each township have a local organization, with local manager, secretary, board of auditors and recommend two directors from each township. These recommended directors are formally elected directors by the stockholders who meet once each year in annual meeting. There is nothing mandatory in this election, but for the eighteen years the company has been in existence there has never been a change in this policy. The directors elect a president, a secretary, a treasurer, a financial secretary, and an executive committee of three members. J. M. Wetley, of Ripley, N. Y., has been financial secretary for twelve years past and has also been a member and the chairman of the executive committee, and the active head of the organization.

In actual operation the company works like clock-work. Its affairs were investigated thoroughly last year by G. Harold Powell of the United States Department of Agriculture, Bureau of Plant Industry, who is a recognized authority on fruit marketing, and he did the Chautauqua and Erie officials the honor of saying that this company was the most effective cooperative marketing association he had found in the United States east of the Rocky Mountains.

Storing Trees in Cellar.—C. A. Green's Reply: Small peach trees or any kind of nursery stock may be kept in a cool cellar well buried in moist sand or sandy loam. The cooler the cellar the better if it does not freeze too hard. But all kinds of trees would be safer heeled in outdoors, so that not only the roots are buried but a large portion of the bodies in sandy soil which is preferable to clayey soil.

#### Spray Now for Scale.

This most serious of scale insects attacks practically all fruit trees and many forest and shade trees. It is a minute insect which soon after birth finds a convenient spot, inserts its proboscis through the bark and begins the formation of a scale on its back. This scale is roundish in form, rarely more than one-sixteenth inch in diameter and is distinguished by a raised point in the center which is surrounded by a slightly depressing ring. It attacks both tree and fruit. On the twigs the scales may become so numerous as to form a scurfy incrustation of a brownish gray color. If the infested bark be removed a red discoloration will be noticed. Says H. R. Fulton, in Am. Cultivator Experiment Station. On the fruit each scale is surrounded by a consistency of 1.03 and miscible oils about 1 to 15 when thoroughly applied during the dormant season are successful. In spraying, care should be taken to cover every part of the tree because of the rapidity with which it multiplies. Experiments at this station during the summer of 1910 show that it is possible to control this pest by spraying with dilute lime-sulphur during the summer when applied frequently. Three applications at a density of 1.01, applied immediately after the young began to emerge and at intervals of ten days thereafter completely controlled a bad infestation on the apple.

#### Boston's Apple Exports.

Although Boston's export trade in grain has been languishing, its apple shipments are gaining on those of New York, the largest single shipment from any American port being sent out from here today. Says Boston Transcript. The apple crop has been a bumper, more than a third larger than that of last season; increased markets for our apples are constantly opening in foreign countries. New England is a producer of the finest qualities of apples, and this is the natural port of their shipment.

The Western New York fruit growers have this year been holding for high prices in the face of the great crop, while marketing has gone on rapidly here. Of course, there are pitfalls in the export trade, as many shippers have found, but the man who knows the people that handle his apples abroad and is assured that the fruit will be marketed there to advantage finds the foreign market a good outlet for his surplus.

#### For Services Rendered.

"Thompson's cow got into my garden and ate all the grass off the lawn."

"What did he do?"

"Sent me a bill for using his cow as a lawn mower."

## READY TO SPRAY

Our No. 190 Horizontal Barrel Sprayer, solidly built on skids, is shipped ready for work in orchard, garden or field. Pump outside—all parts easy to get at. No waste of time; no unpleasant work with the hands in the solution trying to fix valves or packing. No corrosion. Heavy pressure. Thoroughly serviceable and satisfactory. Four row attachment.

You must see this sprayer to know its value. Ask your dealer to show it. Write us for special booklets. Complete line of farm, garden and orchard tools backed by 76 years' experience.

**BATEMAN MFG. CO.,**  
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**Fruit Trees and Small Fruits With a World-wide Reputation for Vigor, Yield and True Species**

Largest and most complete collections in America. Strong, well developed trees and plants, free from defects and parasites.

This business, established in 1840, has 72 years of expert propagation and square dealing behind it. This is a guarantee to you of entire satisfaction. We take extra care in packing and shipping every order—large or small. Goods bought from us will arrive in any part of the country in perfect condition.

**Write for 72nd Annual Catalogue**  
A safe and standard guide to the fruit farmer, and to buyers of Ornamental Trees, Shrubs, Roses, Evergreens and Hardy Plants. Sent free on request.

**ELLWANGER & BARRY**  
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**CARDS**  
I will write your name  
on this, on one dot,  
for only 10¢. The **Ellwanger & Barry** big catalog has the **Ellwanger & Barry** name on it. Address  
W. A. Bode, Expert Penman, Box 177, Fairhaven, Pa.

**BAUER'S FAMOUS SOUTHERN GROWN BERRY PLANTS ARE GROWN BELOW THE BLIZZARD BELT LINE.**

Our plants are hardy for they are grown without any protection and they come to you with nice, glossy leaves; not just a little tender heart as the mulched plants have. When you break that heart your plant is gone.

Our plants cost you no more than this tender Northern-grown plant and will arrive in nice growing condition.

Get my book,  
**HOW TO GROW STRAWBERRIES.**

It tells the facts of strawberry growing from start to finish.

This book is one that I wrote myself and I am a strawberry specialist; at it thirty-two years.

Copy free to you.

**J. A. BAUER,**  
Box 3, Judsonia, Ark.

**BERRY BOXES**

Crates and baskets, Cherry, Plum and Apple boxes, Climax baskets big and small.

#### AS YOU LIKE THEM

We have the best equipped mill in the Northwest and manufacture the Ewald patent folding berry boxes, the only folding berry box made of wood veneer that gives satisfaction. Liberal discount on early orders. A postal brings our price list.

**FRUIT PACKAGE CO., CUMBERLAND, WIS.**

**ABSORBINE**  
Will reduce inflamed, strained, swollen, tender, Ligaments, Tissues or Bruises. Cure the Lameness and Stop pain from a Splint, Side Bone or Bone Spavin. No blister, no hair gone, Horse can be used. Horse Book 2 D free. \$2.00 a bottle at dealers or delivered.

**ABSORBINE, JR.** for mankind, H. Reduces Strained Torn Ligaments, Enlarged glands, veins or muscles—beds ulcers—allays pain. Book Free.

**W. F. YOUNG, P. O. F., 11 Temple St., Springfield, Mass.**

**EASTER POST CARDS FREE**

Sent me two 2¢ stamps and I'll send you 10 beautiful Easter Post Cards and tell you about my big SURPRISE.

**E. T. MEREDITH,** 49 Success Building, Des Moines, Iowa

**DEFEND YOUR TREES**  
from Scale and fungus disease with a Defender Sprayer. Powerful two-line apparatus. Made of Brass, perfect construction, easy working. 15 outfits to select from. Satisfaction guaranteed. Descriptive circular and prices, free.

**C. S. HARDER, Box 61, CATSKILL, N. Y.**

**You u friend, " starve in a**  
"Yes, I mind. I Judge.

**BITTER ROT IN APPLES.**  
Its Sources and the Best Methods of Preventing Its Spread in the Orchard.

The mystery has been pretty well cleared up. The life history of the predator is now fairly well known. The disease is only possible when this injurious parasite exists at the time in the orchard, and when the external conditions are such that it can grow. When it is entirely absent, and when conditions are continuously unfavorable for its development, either through natural or artificial causes, the apples are safe. No rot of this kind can then occur, just as no corn grows in a field until the seed is furnished and the requirements of moisture, temperature, etc., are sufficiently met. Says Prof. T. J. Burrill.

"The parasite passes the winter in the vegetative or mycelial condition. Two kinds of spores are now well known—condidial ones, developed abundantly during the summer on the fruit and in the cankers upon the limbs, and the ascospores, less common in the substance of the cankers and of mummied fruits, produced late in the autumn, or in the earlier part of the next growing season. But neither form of spore cuts any figure in carrying the fungus over the winter. This is directly at variance with what was theoretically supposed must be the case before actual investigations showed the real facts. The ascospores, which, in the case of many fungi, have this overwinter prepatent as their special office—as for instance with the apple scab fungus, in this do not show function sufficiently to make any practical difference in the results. These spores of the bitter rot fungus are just as fragile in their make-up, and just as perishable under adverse conditions, as are the more common condidial spores. They germinate as readily whenever conditions permit, and therefore perish if the possibility of growth on the fruit or elsewhere is not at the time open to them. These spores though somewhat rarely produced in nature, may be developed readily in the laboratory, and may therefore be easily studied, but these studies have yielded results now stated. When kept perfectly dry the vitality of both kinds of spores may be preserved for many months and perhaps for years, but such condition does not continuously exist out of doors.

"On the other hand, the mycelium or vegetative substance of the fungus, whether it has or has not produced both kinds of spore, is very persistent in vitality in the substance in which it has grown. It readily enters a dormant stage, and in this stage survives the winter in new and in many old limb cankers, where it seems to be especially at home during periods of vicissitude, and it also lives a long time in the shrivelled remains of infected apples, which remain attached by their stems to the tree. It seems, however, that it is uncommon for the fungus to continue alive through the winter in fruits which have fallen and which remain on the ground. Hundreds of such fruits picked up under trees which were known to have been badly infected the previous year have yielded no results when placed in proper conditions for the production of spores, and most of those selected during the summer and fall and placed for experimental purposes on the ground have been found free from the living fungus the subsequent season. The principal exception to this in our tests was in the case of some small mummied fruits which were put into small muslin sacks and thrown under the protecting shelter of an evergreen hedge.

The spores produced upon the mummies and upon the cankered limbs start the infection on the given tree by being washed down by rains, and a careful watch for the well-known fruit spots during the last days of June and during July may often serve to locate these sources of infection which have been missed in the winter. Prompt removal then may certainly help in preventing the further infection of the fruit. It follows as a matter of course that such removal of the fruit earliest attacked also tends to diminish the liability of loss, though such removal is of comparatively small consequence after infection becomes general in the orchard. Certain Illinois orchardists have found it practically worth while to keep a man who has sharp powers of seeing things in the orchard during the time when the disease may be expected to make its appearance, for the purpose of removing at once all infecting fruit and limbs as soon as such contaminating sources can be made out by the early spots on the new fruit.

"You used to say," said his boyhood friend, "that you would be willing to starve in an attic if you could have fame." "Yes, I know. But I've changed my mind. I've tried starving in an attic." —Judge.

**Just a Smile.**

You can drive the clouds away  
With a smile,  
Just a smile;  
Turn the darkness into day  
With a smile,  
Just a smile;  
Oh, there's nothing when a man  
Feels the weight of sorrow's yoke  
In this whole wide world that can  
All distress and grief revoke,  
As a smile,  
Just a smile.

How the way is brightened up  
By a smile,  
Just a smile;  
Sweetened is the bitter cup  
By a smile,  
Just a smile;  
Oh, the world may frown at you,  
And your spirits try to blight,  
But the skies are ever blue,  
If you always have in sight  
Just a smile,  
Merry smile.

—Sunset Magazine.

**Oddities in Print.**

An enterprising exchange has collected the following oddities in print:

A butcher's sign out West reads as follows: "John Jacobs kills pigs like his father."

A tailor had a bill in his window to the following effect: "Wanted—several thin coat makers." This is a fine chance for spare tailors.

One advertisement was headed: "Two sisters want washing." So do a good many brothers. Another advertisement was: "Wanted—a boy to sandpaper."

An advertisement in a Boston newspaper appeared as follows: "Wanted, a young man in the dry goods trade, to be partly outdoors and partly behind the counter."

**Cures a Baulky Horse.**

A large man stepped from the crowd, clapped a handkerchief over the horse's eyes, which, wide open, was staring with fright at the throng on the sidewalk. With his other hand the man gave the rein a jerk, and the balky little horse leaped forward.

That's a simple little incident of life in a large city, but at the same time it conveys a moral.

For the little brown horse was balky, similar to many balky little men who get their vision twisted in some direction and make up their minds that in that direction there lies no hope for them and that it is useless to try.

So they plant their feet and refuse to move forward. Instead, they lie back in the shafts and all the persuasion their friends may employ cannot start them.

**Kalamazoo Celery.**

We have many friends in Michigan. There is a friend connected with the King Paper Co., who has sent us by express a box of prize winning celery in prime condition for eating. Kalamazoo celery is noted for its excellence all over this country.

**Plums—A Reward for Industry.**

The ravages of weeds, blights and insects, fearful to the lazy and indifferent, are providential happenings to the industrious and intelligent. The former folds his hands and starves—the latter "mounts barbed steeds and fights the fearful adversaries" as Shakespeare would say, and he conquers. A few years ago plum-growing was abandoned. "They won't do any more." Fungi and insects had the field to themselves. But the industrious Geneva horticulturists set to work. Willard, E. D. Smith, and others devised plans for successfully opposing the enemy. With little competition in the market, they have placed their products everywhere. They are profiting by their industry. Verily, nature has no use for lazy men.

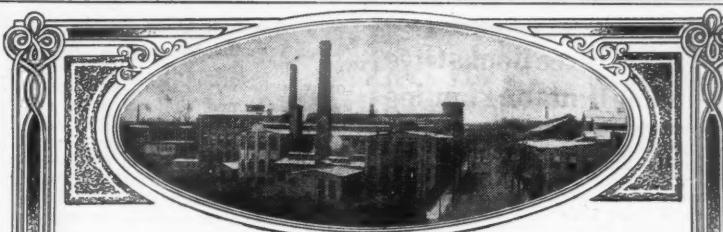
Walter Wood killed the first white squirrel ever seen in this county. It seemed to be the same as the two grays that it was with, only in color, which was snow white, its eyes being pink.—Naples Record.

Abram Nostrand located a swarm of bees in the cornice of the Congregational church and when the crop of honey was harvested, nearly one hundred pounds of the sweetness were taken.—Moravia Republican Register.

Miss Hattie Miller poured oil in a coal stove to rekindle the fire one day this week. Miss Miller is alive and uninjured, but masons are rebuilding the chimney with which the pipe connected the stove.—Dansville Breeze.

"Why did you say you were going to serve your turkey a la comic paper?" "It'll be stuffed with chestnuts."—Brooklyn Eagle.

"Do you think it will always be summer in the Garden of Eden?" asked Eve. "No," replied Adam, pointing to the ripening apples; "I think we shall have an early fall."—Philadelphia Record.



## A Quarter Century of Perfect Roofing Service

During the 25 years that J-M Asbestos Roofing has been on plant of The Johns-Pratt Co., Hartford, Conn., (above illustrated), they never painted this roofing or gave it the slightest attention.

## J-M ASBESTOS ROOFING

"The Standard of Quality"  
Fire-proof—Weather-proof—Acid-proof

Keeps buildings warm in Winter and cool in Summer.  
Sold by most dealers; or sold direct if not at your dealer's.

Write for specimen of curious Asbestos rock and illustrated Book No. U 35

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## Phelps Big Book Now Waiting For Your Postal Shows You the Biggest Selection of Buggy Styles in America This Year

PHelps' 12th annual Style Book of Split Hickory Vehicles for 1912 is ready—written by Phelps himself—shows you more latest brand new style buggies than 25 dealers could in 10 big cities. How he can guarantee to save you big money on price this season and make you a better buggy to order. Why trade-marked Split Hickory buggies are the best grade made. How you can test any style Split Hickory before you decide to keep it—the way over 150,000 others have. Why it pays you to get your buggy new direct from his factory rather than to buy from "job-lot" or "stock-made" buggies that dealers are carrying.

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Phelps—if you keep it after your road test. Just take his book and pick out the style you want—made to order—with your choice of trimmings, upholstery, etc.—Auto Seat Buggies, Surrays, Carriages, Phaetons, Driving Carts, Spring Wagons, etc.—and full line of high grade Harness. All highest grade made. Woodwork in running gears and shafts, of straight grained second growth Shellbark Split Hickory—wheels celebrated triple A grade found on no other Vehicle as explained fully in book.

Send a Postal for Book TODAY.

H. C. Phelps, President,  
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The Largest Buggy Factory in the World Selling Direct to Consumer



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## These Two Free Books Give Valuable Hints on Planting

When buying any article of commerce, one must depend almost entirely upon the seller. He must be able to inspire confidence, must show that he knows his business and, above all, prove that he is honest. This is even more applicable to our line of business than any other. Why take any risk? Why not deal direct and at real cost? We

have been in business 58 years, have 1,200 acres and 47 greenhouses. Everything in Fruit and Ornamental

Trees, Evergreens, Roses, Shrubs, Vines, Bulbs, Flower and Garden Seeds. Satisfaction guaranteed.

Write Today for our 168-page Catalog No. 2, or for Fruit and Ornamental Tree Catalog No. 1; both free.

THE STORRS & HARRISON CO. Box 328, Painesville, Ohio (45)

## Kill the Scale

with the one most reliable remedy against the SAN JOSE SCALE.

### Spray NOW with BOWKER'S LIME-SULPHUR

Write for Book and Price List to BOWKER INSECTICIDE CO. BOSTON, MASS.

We ship also from Baltimore, Md. and Cincinnati, O.

## Paint Without Oil

Remarkable Discovery That Cuts Down the Cost of Paint Seventy-Five Per Cent.

A Free Trial Package is Mailed to Everyone Who Writes.

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powdral paint. It comes in the form of a dry powder and all that is required is cold water to make paint weather proof, fire proof and as durable as oil paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manuf'r', 16 North St., Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write to-day.



Wanted—A man or woman to act as our information reporter. All or spare time. No experience necessary. \$50 to \$100 per month. Nothing to sell. Send stamp for particulars. SALES ASSOCIATION, 616 Association Bldg., Indianapolis, Ind.

## FRUIT TREES

We have the nicest lot of guaranteed fruit trees you ever saw—apples, plums, cherries, pears, peaches. All grown in the north, hardy, healthy, absolutely free from scale. And they're all going to be sold at bargain prices.

We Do Not Sell Through Agents. No need of your paying agents' commissions and expenses. Buy direct from the nursery. We save you about half the price agents charge.

### Get Our Nursery Book

Tells how to plant trees, shrubs, vines, etc. Tells how to care for them, when and how to spray. Gives a fund of information and quotes prices that are bound to interest you. We prepay the freight on orders of \$5 or more.

ALLEN L. WOOD, Woodlawn Nurseries 576 Culver Road, Rochester, N. Y.

### A Few Good Plums.

The Reine Claude is generally counted as a short-lived tree. Its tendency is towards heavy bearing and unless the fruit is thinned the tree soon exhausts itself. With proper thinning and good culture, care and feeding the Reine Claude may be made to live and produce profitably for a generation. The great plum grower of Western New York, S. D. Williard, had Reine Claude trees which had been set twenty-two years and borne

feed once a day for ten days; omit for three days and then feed again for ten days. Another formula is fenugreek, eight pounds; powdered gentian, eight pounds; powdered sulphur, eight pounds; potassium nitrate, eight pounds; resin, eight pounds; cayenne pepper, four pounds; flax meal, 44 pounds; powdered charcoal, 20 pounds; common salt, 20 pounds; wheat bran, 100 pounds. This mixture costs less than \$5 per cent. and is enough for a whole herd.



seventeen full crops. They had failed only one year after coming into bearing. When I saw them they gave indication of still being profitable for several years.

The Bradshaw is a very profitable sort. It is large, productive, and of good color and the tree is a vigorous, thrifty grower. The quality is not of the best, but it is a profitable market variety.

The Japanese plums as a class have proved their ability to resist the black knot. While here and there a few knots have been found they are scarce and not serious enough to make any count of. Still they disprove the claim that the Japs are black knot proof. However free they may be from this trouble they have a decided susceptibility to the rot. They also set the fruit so thickly that it touches all the way along the limbs. But careful thinning and spraying with the Bordeaux mixture will check the rot. Another bad fault is the early blooming of many varieties. A late frost will often catch them and destroy the entire crop.

### Just Like George Washington.

Tradesman—"Can you pay me a little on that bill you owe me, Mr. Piker?"

Customer—"I'm sorry to say, Mr. Spice, that I can't. Of course I could trump up a yarn that I expect a big check next week, and that I will pay you then, but the fact is I don't expect a check, and the money I might have paid you my wife and I blew in on the theater and a little feed afterwards last night. You see I'm frank and honest about it. Good morning!"

Toastmaster—"Order, gentlemen, if you please. We have with us to-night a collection of prosy boos who will make sad and ghastly attempts at entertaining us with speeches. The dinner committee had hoped to secure some real speakers for this occasion, but they were disappointed at the last minute, and the result is that we shall be bored to death. You gentlemen, however, are better off than I am. You can sneak out on tiptoe if you feel yourselves going crazy or to sleep, but I, your toastmaster, have got to sit up here at the speaker's table and wear an air of rapt attention during every dirge. Needless to say, gentlemen, it affords me mighty little pleasure to introduce to you—

—Brooklyn Times.

### Fruit Trees Exhaust the Soil.

In considering the reasons why apple and other fruit trees do not bear as many or as fine apples as they did in the early days, writes Professor H. Garman, of Kentucky Experiment Station, I have been impressed with the importance of supplying the trees with fertilizers as the soil becomes exhausted, and am satisfied that the greater relative difficulty experienced nowadays in keeping fruit trees in good condition is in part due to an exhaustion of the soil.

Trees forage more widely than smaller plants, and may not show the effects of starvation as suddenly or as soon, but they must show it in time if grown long on the same land without anything being returned to the soil to replace materials used.

A Stock Tonic.—If ranchmen wish to give their stock a tonic they may buy the ingredients and mix them up at home. Says Field and Farm. The following formula for a condimental feed is recommended: Ground gentian, one pound; ground ginger, one-fourth pound; powdered saltpepper, one-fourth pound; powdered iron sulphate, one-fourth pound. Mix and give one tablespoonful in the

feed once a day for ten days; omit for three days and then feed again for ten days. Another formula is fenugreek, eight pounds; powdered gentian, eight pounds; powdered sulphur, eight pounds; potassium nitrate, eight pounds; resin, eight pounds; cayenne pepper, four pounds; flax meal, 44 pounds; powdered charcoal, 20 pounds; common salt, 20 pounds; wheat bran, 100 pounds. This mixture costs less than \$5 per cent. and is enough for a whole herd.

### Big Fruit Grower May Establish Farm Here.

C. Louis Allen, owner of a large fruit farm in the Bitter Root Valley and in Virginia, and also president of the American Apple Company, has become interested in Monroe County fruit farms through his visit to the American Land and Irrigation Exposition, now in progress in New York City. He will make a trip to Rochester soon, it is said, to look over the land.

If the farm is purchased, it will make one of a chain of Eastern orchards owned by the company and operated on the Western plan. He believes he can grow more attractive fruit near Rochester than he does in his orchards in Washington.

The growth of a number of successive crops of the same plant has been lately found not only to exhaust the soil for that plant but to develop an active poison for it. Steam distillation of a wheat-sick plant yielded a crystalline substance that is toxic to wheat, and from a soil exhausted for cowpeas a crystalline substance was obtained that is toxic to cowpeas, but not to wheat.

The nitrogen-absorbing bacilli discovered in root nodules twenty years ago were derived from arable soil, but were attracted to leguminous plants only, though the variety favoring peas differed from that found on lupins. With the leguminous plant of its choice each form of micro-organism entered into true symbiotic relationship, absorbing nitrogen from the air and feeding it to the higher plant and receiving carbon in return. In experiments at King's College, in London, during the last two or three years, Prof. Bottomley has not only shown an increase of eighty per cent. in the yield of leguminous plants in soil sown with the proper bacilli, but he has succeeded in producing varieties of the bacilli for other plants, thus increasing the yield also of cereals, roses, cabbages and tomatoes. His method has consisted in cultivating several generations of bacilli away from the leguminous root in an extract of the new root, the descendants thus acquiring a taste for the new food. There seems no reason to doubt that nitrogen-fixing bacilli may be adapted to all green plants, and the soil may be fertilized without the nitrates made by chemical and electrical processes.

### English Walnuts Yield \$360 Per Acre.

Western New York can boast of a ten year old orchard of budded English walnuts which last year yielded two tons of fine nuts that sold at eighteen cents per pound, making a total return of \$360 per acre, and the orchard will increase in productivity each year, says American Cultivator. Many other cases might be cited, but these are sufficient to prove that nut growing is practicable and profitable in the northeastern part of the United States.

### ACTIVE MARKETS.

Commercially nuts are growing more and more important each year. The following figures indicate the rapid increase in importations of nuts into the United States. In 1896 nuts were imported to the value of \$93,283. In 1900, \$156,490. In 1905, \$6,188,343. In 1909, \$8,664,253. In 1910, I am informed there was a much greater increase but will not quote figures as I have not received them directly from Government sources. At the same time our imports have been increasing, the wholesale price of nuts has been likewise increasing, showing that production and imports do not meet the demands of consumption.

### Sheridan, New York Grower Produces Ninety-nine Tons From Twenty-Three Acres.

Sheridan, Oct. 24.—E. E. Hamlet harvested ninety-nine tons of grapes from a vineyard of twenty-three acres this fall.

### Absent Minded Husbands.

The preacher's wife said: "My husband will prepare and write a sermon and go to church and forget it, and will get up and blunder and stammer along, and no one gets head or tail of his discourse."

The Doctor's wife said: "Mine beats him. Why, he went out the other day to see a patient, and came home and chucked me under the chin saying, 'Little girl, I have seen you somewhere, what is your name?'"

## 1000% Returns From

the use of a Hercules Stump Puller. Bumper crops instead of stumps. Big money in place of taxes. \$1,200 from 40 acres the first year—\$750 in extra crops every year after. Get the catalog of the

### Hercules

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You can clear an acre of stumps a day. 30 days' free trial. Guaranteed 3 years. Special introductory price.

Write today for big free catalog.

HERCULES MFG. CO. 163 17th St. Centerville, Iowa



## Pull Stumps! Make Money!

Get this Milne Unbreakable All-Steel Combination Stump Puller. Pulls or Stump Anchored. Pulls stumps, green trees and hedges quick, easy. Raise crops next year on land now full of stumps. Pulls trees faster than able to cut them. Pull 1 to 5 acres without moving. Milne Double. The Milne Double is a combination attachment, also Rotary Power Attachment for sawing, grinding, washing, etc.

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### THE SMITH STUMP PULLER

This photograph shows the work of the Smith Stump Puller, which pulls stumps with two ponies, stumps that run from 4 to 6 feet through, at an average cost of 5 cents per stump. Write for our free Catalog.

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## HOW PLOWING THE ORCHARD PAYS.

Destroys The Railroad Worm.  
Written for Green's Fruit Grower  
By John E. Taylor.

Orchardists are waking up to the fact that it pays to cultivate the orchard as they would their crops. By plowing an orchard at least twice a year it has been proved by various orchardists in this state that better fruit, more of it, can be grown and the trees will live longer.

Ray Allen of Skowhegan, Maine is one of the farmers that has set a good example in this matter. In one instance he had a number of trees that bore a little less than the average tree of a good eating apple, but they would invariably every year have a great many railroad worms, and the fruit would be small. Three years ago he plowed around these trees, quite close to them, not disturbing the roots much, excepting stirring the dirt

respiration is reduced, and ripening and ultimate decay are consequently delayed. The amount of heat generated in respiration has been approximately determined in the case of a number of fruits.

## Mark Twain as a Thinker.

Man will do many things to get himself loved; he will do all things to get himself envied.

There are no people who are quite so vulgar as the over-refined ones.

There are people who can do all fine and heroic things but one: Keep from telling their happiness to the unhappy.

The English are mentioned in the Bible; Blessed are the meek, for they shall inherit the earth.

The timid man yearns for full value and demands a tenth. The bold man strikes for double value and compromises on par.



A young apple tree the second year after setting out, showing the growth that it made, after corn had been planted around it as shown by John E. Taylor.

on top of them, and then he harrowed in some manure and planted the piece to garden truck, etc. That fall the trees bore apples not of any larger size but they were free from railroad worms. He thought this peculiar, yet entirely satisfactory.

Not being satisfied with one year's trial he thought he would try the same scheme the next year and did so. And this time his apples were not only free from railroad worms but were larger.

He did not stop here but took other parts of his orchard, doing the same thing, and each time the apples grew larger. This was especially true with the MacIntosh apple and the Baldwins.

Another instance in which it can be shown that plowing an orchard and planting a crop in it pays is well illustrated by an orchard of nearly 1,000 trees owned by R. T. Patten of Skowhegan on Eaton Mountain farm. The first year after setting out this orchard he planted corn in all of it, excepting a row of trees at the end of the rows of the orchard. At the time of harvesting the corn, where he had planted the corn the main branches on the trees had grown nearly 20 inches in that season, while the main branches of the trees where the corn had not been planted had grown only six inches.

## The Respiration of Fruits.

In a bulletin issued by the Department of Agriculture, Professor H. C. Gore, assistant chemist of the Bureau of Foods, has set forth the methods used and results obtained in the studies of the Department on fruit respiration.

The work was undertaken in order to obtain information which would be of value in connection with the rapid advances made in field work on the transportation and storage of fruit. It has been established by science that plants breathe, that they give off heat in respiration just as animals do, and that the various fruits have different rates of respiration, relatively greater or less in different varieties, and also varying with the heat, moisture, and other conditions to which the fruits are subjected.

Generally speaking, the fruits which mature rapidly and become over-ripe quickly, such as strawberries, raspberries, blackberries and other small fruits, breathe rapidly, while those which develop slowly, like the citrus fruits, have a low rate of respiration. Peaches, plums, apples, pears and grapes are intermediate between these two classes.

The law expressing the increase in the rate of respiration in relation to the increase of temperature is now approximately known. When the fruit is subjected to a low temperature in cold storage or by any other agency, the rate of

There is no character, howsoever good and fine, but can be destroyed by ridicule, howsoever poor and witless. Observe the ass, for instance: his character is about perfect; he is the choicest spirit among all the humbler animals, yet see what ridicule has brought him to. Instead of feeling complimented when we are called an ass, we are left in doubt.

When your watch gets out of order you have choice of two things to do: throw it in the fire or take it to the watchtinker. The former is the quickest.

In the first place, God made idiots. This was for practice. Then He made School Boards.

Cold Air Cure.—Diseases cured or improved by cold air are specified in American Medicine as malaria, tuberculosis, digestive disturbances, yellow fever, tetanus, and organic troubles affecting the blood pressure. Cold air contains more oxygen, requires fewer respirations, and less heart energy—vital matters when the heart is affected, as is the case in fevers and wasting diseases. American Medicine hints that a study of arterial tension in cold climates would yield the "key to much which is now locked from us," in explaining the benefits of cold air.

## Costly Peaches.

A valued Pennsylvania reader has "taken pen in hand" and sought corroboration of the statement made in the official newspaper, that high-quality peaches sold in London in October at 48 cents each. The question appears to have been referred to Deputy Consul-General Carl R. Loop, stationed at London, and he declares that the statement was literally correct. Mr. Loop says, speaking of peaches: To give some indication of the prices realized in this market, the quotations in Covent Garden on October 24th were \$1.46 to \$4.38 per dozen, wholesale. According to the time of year, the quality and the supply of fruit, prices naturally fluctuate, and it is not improbable, according to local dealers, that higher prices than those indicated will be realized later.

The information given out by Daily Consular and Trade Reports and its official reporters should be of value to American fruit growers. It goes without saying that the ordinary run of orchard peaches would not, however good their condition, bring the prices quoted by the Consul. It is more than probable, though, that if highly graded and well selected American peaches can be so packed and shipped that they will reach the English market in good order, a remunerative trade may be established abroad. For there should be fair profit in peaches sold in London, even at the lowest quotation of \$1.46 per dozen.

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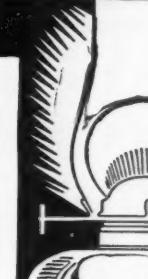
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What do You Think of this List of Varieties of Fruit Trees for Indiana and States in Similar Latitudes?

Purdue University Agricultural Experiment Station, Arthur Goss, Director.

#### Varieties of Fruit for Planting.

The following list of varieties of fruit has been compiled for the benefit of the thousands of farmers who will order fruit trees this winter. The number of recommended sorts is relatively small and by no means includes every kind which will thrive in the state. Only those are listed below which in the experience of the fruit growers of the state, and in the tests made by the Station, have been found most reliable. The varieties which are recommended for wide commercial planting are designated by an asterisk (\*).

#### Apples

Northern Indiana—

Early—Red June, Early Harvest, Red Astrachan, Yellow Transparent\*, Sweet Bough and Benoni.

Mid-season—Oldenburg (Duchess of)\*, Wealthy\*, Gravenstein, Jefferis, Maiden Blush, McIntosh.

Late—Jonathan\*, Grimes\*, Fameuse\*, Hubbardston\*, Wagener\*, Belleflower, Esopus, Stayman\*, Northern Spy\*, Baldwin\*, R. I. Greening, Rome Beauty\*.

Southern Indiana—

Early—Early Harvest, Yellow Transparent\*, Astrachan, Sweet Bough, Benoni\*.

Mid-season—Oldenburg (Duchess of)\*, Wealthy\*, Jefferis, Fall Pippin.

Late—Jonathan\*, Grimes\*, Stayman\*, Rome\*, Akin\*, Winesap\*, York Imperial\*.

#### Pears

Early—Tyson, Clapp's Favorite, Bartlett.

Mid-season—Anjou, Bosc, LeConte, Vernon Beauty, Seckel.

Late—Kieffer\*, Lawrence, Winter Nelis, Dana Hovey.

#### Quinces

Early—Rea (Rea's Mammoth).

Mid-season—Champion\*, Meech, Orange\*.

#### Peaches

Early—Greensboro (free, white), Admiral Dewey (semi-cling, yellow), Mountain Rose (free, white).

Mid-season—Carmen (free)\*, Champion (free, white), Belle of Georgia (free, white)\*, Elberta (free, yellow)\*, Engle (free), Old Mixon Free (free, white), Fitzgerald (free, yellow).

Late—Late Crawford (free, white), Smock (free, yellow)\*, Salway (free, yellow).

#### Plums

Early—Abundance (Japanese), Burbank (Japanese)\*.

Mid-season—Lombard (European)\*, Reine Claude (European)\*, Monarch (European), Climax (Hybrid Japanese), Golden Drop (European), De Soto (American).

Late—Arch Duke (European)\*, Shropshire (damson, European)\*, French (damson, European)\*.

#### Apricot

Early Golden, Moorpark\*, Royal\*.

#### Cherries

Early—Early Richmond\*.

Mid-season—Montmorency\*.

Late—English Morello.

The above are all sour cherries; the sweet sorts are evidently not well adapted to our soil for though the trees grow luxuriantly, they generally fail to set crops of fruit.

#### Grapes

Early—Brighton (red)\*, Moore's Early (dark blue), Warden (dark blue)\*, Green Mountain (white).

Mid-season—Delaware (red), Concord (dark blue)\*, Agawam (red), Niagara (white)\*, Pocklington (white).

Late—Catawba (red)\*.

#### Blackberries

Early—Early Harvest\*.

Mid-season—Agawan, Snyder\*, Eldorado\*.

#### Red Raspberries

Marlboro, Cuthbert\*, Loudon\*, Eaton\*.

#### Black Raspberries

Early—Conrath.

Mid-season—Cumberland\*, Kansas.

Late—Gregg\*.

#### Currants (red)

Wilder\*, Fay\*, Perfection\*.

#### Gooseberries

Downing\*, Red Jacket, Pearl, Josselyn\*.

#### Strawberries

Early—Warfield (Imperfect), Dunlap (Perfect)\*.

Mid-season—Haverland (Imp.)\*, Bush (Imp.)\*, Marshall (Per.), Black Beauty (Per.).

Late—Sample (Imp.)\*, Gandy (Per.)\*.

Note—In selecting strawberry varieties, never choose Imperfect sorts alone but plant at least one row of Perfect to four of Imperfect.

C. G. Woodbury,  
Horticulturist.  
J. W. Wellington,  
Ass't Horticulturist.

C. A. Green's Reply: I am asked what I think of the above list of fruit trees for orchard planting. Such a list is helpful to the planter but should not always be followed without careful attention to the part of the planter and careful investigation. A man when asked what varieties of the various fruits he would advise planting may well tremble, for he is reading on dangerous ground.

The above list is recommended by the Purdue University for the entire state of Indiana, whereas there is a great difference in soil and situation and even of climate in any one state, and it is likely that some of the varieties named might do well in some parts of Indiana and not in other parts. It is a well-known fact that certain varieties may do well in a certain part of a township and not in another part, or even that a variety may do well on one farm and not on the adjoining farm, owing to differences in soil or conditions.

I will begin with the suggestion for changes in apples. Red June is a very small reddish apple, not at all comparable with Yellow Transparent, Star apple or Fanny. Winona I know nothing about. Jonathan is a beautiful red apple of fine quality as grown in some parts of the far west, but in many other of the middle or eastern states is infinitesimal in size. Grimes is one of the finest apples in quality but I cannot recommend it as a commercial variety in the eastern or middle states. The same is true of Esopus, which is a failure in many of the eastern states. Akin apple I have no knowledge of.

Pears—I would add Wilder Early to the early pears. I would strike out Le Conte, which I deem a worthless variety.

#### Apple Growing in Kentucky.

In selecting trees for an orchard you should have two things in mind: First, the trees should ripen their fruit in rotation; second, you should select as nearly as possible a tree that will produce a crop each year. The Kinnard, Kittogee, Milam, Rome Beauty, Ben Davis, Wine Sap, and Golden Sweet will be quite sure to produce a crop every year if protected from frost. After the orchard is out, it must be protected from mice, rabbits, insects and fungi, says Home and Farm.

Just before the snow begins to fall in December the trees should be wrapped to a distance of two to two and one-half feet with burlap, straw, chicken wire or anything that will not shut off the air, but will prevent the rabbits from gnawing the bark. If there is any scale on your trees you should spray once before the trees bloom and once just after the blossoms fall. A little later they should be sprayed again for the codling moth. In these sprays we use a lime-sulphur fluid. We purchase this from any large chemical company at about 20 cents a gallon. One gallon will make twelve by adding the proper amount of water.

In spray for the codling moth, arsenate lead should be added at the rate of three pounds to fifty gallons of the mixture. A large number of people use Bordeaux mixture in spraying for the codling moth, into which they put three pounds of arsenate of lead to fifty gallons of the mixture.

Bordeaux mixture is made by using four pounds of lime, three and one-half pounds of copper sulphate and fifty gallons of water. If the arsenate of lead is added it will rid the trees of both scale and moth.

There are three things most likely to become exhausted in the apple orchard. These are potassium, nitrogen and phosphoric acid. Nitrogen will produce a heavy growth of leaves and wood, while the other two will aid in bringing an abundant crop of fruit. Common barnyard manure will supply each of these elements or they may be supplied by commercial fertilizer.

An orchard does better when it is cultivated and the weeds kept down. If the trees are headed so low that a team can not be driven under them, the ground should be dug up with a spade or mattock and the weeds kept down with a hoe. A large number of varieties will begin to produce the third year after setting, but if a tree be several years in coming into fruit it may be brought to fruition by the following method:

The fruit buds are formed in June and at this time if you can do something to check the growth of the tree it will form such a bud. To do this you must peel the bark off the tree in strips two inches wide and go entirely around the tree from limbs to the ground, taking off strips two inches wide, leaving also strips two inches. These strips will hull over without injury to the tree, but give it such a shock that it will produce a crop the next year.

When your orchard comes into bearing and you have fruit to care for, don't shake it from the tree, as bruised fruit soon decays. In selling apples be sure to sort them carefully and properly label the different grades. By doing this you can readily create a market for your fruit.

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## The Fruit Farm.

### Who Is Competent to Manage a Fruit Farm?

A subscriber of Green's Fruit Grower says that he has taken a short course in horticulture at a state college and has worked on a fruit farm this past year, has helped set out a large orchard, has sprayed with a power sprayer. He now wants a position as manager of an orchard.

C. A. Green's Reply: There are many men who would like to secure the services of a competent fruit grower. I do not mean by this a specialist in apple, peach or plum growing, but a man capable of knowing all of the hardy small fruits and the large fruits.

The question is how can I or any other person learn whether this man is qualified for such work as I have indicated. There are certain men who pick up a vast amount of information in a brief course in horticulture at some agricultural college and from one year's practical experience on a fruit farm, but there are others who would gather but little practical information. The man who has enthusiasm for his work, who has a deep abiding love for fruit growing, would accumulate under the same circumstances twice as much practical information as another man who had less enthusiasm.

In order to secure a position this young man or any one similarly placed should be able to give testimonials from the agricultural college where he was being instructed and from the fruit farm where he was getting practical experience as to his ability. My opinion is that the average man having had the teaching and experience that our young friend says he has received should serve further apprenticeship before taking charge of a large commercial orchard or fruit farm.

I have in mind a man of marked ability as a writer, speaker and teacher of fruit growing, a man who has earned a valuable reputation as a worker in state experiment stations, who has been employed by a very wealthy man to plant extensive berry fields, vineyards and orchards of apple, peach, pear, plum and cherry. I think I am safe in assuming that this professor, to whom I allude, has from twenty to fifty times as much practical knowledge of fruit growing as the average young man could expect to have who has simply enjoyed a short term of instruction and one season's experience on a fruit farm.

I do not make the above statement with the idea of discouraging any young man from continuing his work. My desire is to encourage young men to take up fruit growing as a profession, assuring them that when they are qualified there will be little trouble in securing a position. But I would not encourage anyone to assume that one winter's study in an agricultural college and one season's experience on a fruit farm would qualify that person for taking entire charge of a fruit farm. But such a man might be more than ordinarily helpful if employed under the direction of some person who has had more experience.

I will give this young man's address to anyone who will write me for that purpose, enclosing stamp for reply.

### LAW OF SUPPLY AND DEMAND. The Latter May be Indefinitely Extended by Wise Efforts of Fruit Growers.

At the National Apple Show at Spokane a commercial man who had been traveling through the Northwest said fruit growers complained of the low prices, etc., and added that he had been in dozens of small towns in Eastern Oregon and Washington and could not get a peach to eat, says N. Y. Tribune.

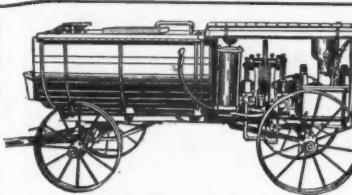
A few years ago, when the editor first took charge of the Hood River Fruit Growers' Union, the business by express was doubled the next year, and doubled again the following year. Seattle was not consuming a single carload of Hood River strawberries in a year, neither was Spokane. In less than two years each of these cities was consuming large quantities. The first year the editor was manager of the berry union the average price of strawberries was \$1.28 a crate; during the last six years the average price for the season has been somewhere between \$2.25 and \$2.50 net.

These facts illustrate the importance to the fruit business of developing local markets. A wide and thorough distributing system must and will be worked out, so that all markets, however small, will be supplied, realizing good prices. It is all nonsense to say that little towns won't pay fair prices when it is known that bananas sell at 30 cents a dozen and Florida grapefruit sells readily in the

little town of Hood River, about three thousand population, at 15 cents each. Then too, the supply of green fruits can be decreased to equalize the demand and create a sale at fair prices by canneries, evaporators, cider and vinegar factories. The output of the canneries, evaporators and dryers in California in 1911 amounted to \$28,000,000.

So let us be up and doing to open up new markets, increase old ones and establish a wider distribution. Let us save the waste by canneries, evaporators, cider and vinegar factories. The problems of to-day are to market the fruit on business principles, create a greater demand as well as a wider demand—save the by-products; and last, but not least, study the economic side of production and marketing.—E. H. Shepard editorial, in January "Better Fruit."

If they can't be stars, some people insist upon being clouds.



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Scale or other sucking insects greatly decrease the vitality of the tree. It is impossible to produce first quality fruit from infested trees, and unless the ravages of these pests are stopped the tree is soon killed. The only remedy is to spray. By using S-W Lime-Sulfur Solution you are assured of getting safe, certain and paying results. You save your trees, get more fruit and better fruit at a very small cost.

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It will keep them healthy and keep in control the San Jose Scale and other sucking insects. S-W Lime-Sulfur contains the maximum amount of sulphur possible to combine in an absolutely safe spray and is therefore exceptionally effective. It does not crystallize and clog the spray-pump. S-W Lime-Sulfur Solution is effective, economical and for sale in your locality in any quantity you desire.

Look up our Agent in your locality or write us for his name—and don't forget to send for a free copy of "Spraying, a Profitable Investment."

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You're not getting the most out of spraying if you're following the "hit-or-miss" style. Systematic methods will double your returns, and you'll find them described in detail in "Spraying, a Profitable Investment." It's a book of 120 pages, containing over 50 illustrations, telling in plain English how, why and when to spray. It was compiled from data, gathered by experts, and is thoroughly reliable in every detail.

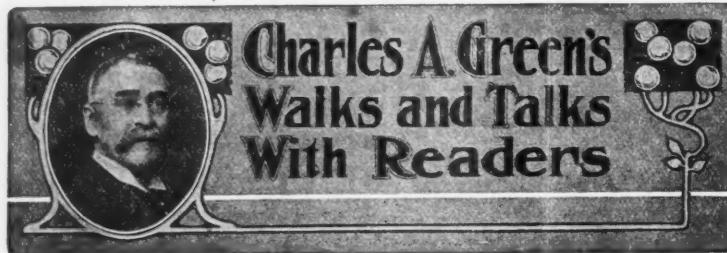
**THE SHERWIN-WILLIAMS CO.**

MAKERS OF INSECTICIDES AND FUNGICIDES

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CLEVELAND, OHIO



"No one really fails who does his level best."—Anon.

ROCHESTER, N. Y., FEBRUARY, 1912

**A Great Undertaking.**—Occasionally enterprises of worldwide interest are undertaken. Among these is the uniting of two oceans, the Atlantic and the Pacific, by the Panama canal. This is one of the greatest enterprises of this age or of any age, shortening the voyage from New York to San Francisco from thirteen thousand miles to five thousand miles.

This great canal, costing over two hundred million dollars, passes through a country which may in the future be like fairyland, but which at present is the home of the serpent, the wildcat, the bear, panther and deer, and human beings equally wild and unregenerate. Forty-three thousand men have been at work for many years on this canal. The greatest achievement in the history of the world has been in making the canal region healthful, whereas it was by nature pestilential. If nothing further should be accomplished by this canal than learning how to clear a country of pestilence, it is possible that the canal might be a profitable investment. We are living in a wonderful age in sight of marvelous achievements.

**Thin Shelled Hickory Nuts.**—William Stockwell of Orleans county, New York, sends Green's Fruit Grower a box of remarkable hickory nuts. I cannot remember ever having seen such thin shelled hickory nuts as these except possibly on one occasion, and that the hickory nut tree that bore so bountifully in the garden of my father's farm, twelve miles south of Rochester, N. Y. Not only are these shells thin but the meats are very plump and of superior quality. The nuts are of fairly good size but not large. I consider this hickory nut worth propagating and would suggest that the owner get some one to place grafts from this tree on other hickory trees nearby at the proper season next spring. No one but a skilled grafted can succeed in grafting nuts. I consider myself a fairly good hand at grafting but I have never yet succeeded in grafting any kind of nuts, but my friend, H. E. Van Deman, has grafted many thousand pecan trees in his thousand acre plantation in Louisiana, and he has grafted many other nuts. The time is coming when such valuable nuts as those sent us by Mr. Stockwell will be considered of great value.

**Seedling Peaches from Alberta.**—I am receiving from different parts of this country large and beautiful peaches of the Alberta type somewhat resembling Alberta, sometimes much larger than Alberta and differing from them in color and many other respects. These promising seedlings of Alberta lead me to suspect that the Alberta peach is more liable to reproduce itself from seed than most other varieties. I would, therefore, advise those who care to experiment to plant the seeds of the Alberta peach hoping to get in some instances the varieties even superior to Alberta.

This remarkable Alberta peach originated on the farm of Mr. Samuel Rump in Georgia, was one of thousands of seedlings which filled a twelve acre lot, and was the only tree that produced fruit of superior merit. All the trees on this large field were destroyed except this one tree which bore the first Alberta peaches. It has been well known that there are certain varieties of peaches, for instance Wager, which often reproduces itself very nearly from seed. Possibly The Alberta is one of this class.

#### The Breathing of Fruits.

Instead of the term I use, "breathing of fruits," it is generally alluded to as respiration, but neither term is quite correct, as it appears to me. What we know is that fruits after picking are constantly changing the character of their tissues, and ripening, throwing off heat and moisture. This transformation has not been generally understood by the average fruit grower, who having noticed the apparent sweating of apples when piled in the orchard, has supposed that the sweating was a necessary process for the fruit to undergo before it could be properly packed in barrels or boxes for shipment.

One cause of moisture appearing on apples is the condensation of the air on the colder surface of the fruit, the same as water gathers on the outside of a pitcher

filled with cold water on a warm day. The escape of heat and moisture from fruit is in most cases imperceptible. Not only fruits but live trees and shrubs appear to be constantly giving off heat. If a closed car is fully loaded with live trees and shrubs, though the temperature in the car may be below freezing, the contents of the car may not freeze. This fact should be taken into account in storing fruit.

It has been found necessary to ventilate crates of strawberries, raspberries and other small fruits, as completely as possible. These berries throw off more heat than the larger fruits and thus are more perishable and difficult of shipment. It is almost impossible to properly ventilate even a quart box of ripe strawberries thus when thirty-two quarts of strawberries are pressed into a bushel crate, it is almost impossible to ventilate the crate sufficiently to remove the heat as fast as it is produced, thus the berries soon perish. At Green's Fruit Farm it has always been our aim to leave the crate of berries over night after picking, as freely exposed to the air on all sides, as possible, and to place them where there will be a free current of air through open doorways.

In the shipment of carloads of fruit it is only of late years that it has been discovered that by precooling the fruit before the car started, by the introduction of ice, the fruit would remain in prime condition much longer than if allowed to start on its journey without effective means of removing the heat coming from the fruit as fast as it was engendered. One reason why fruits wrapped in paper will remain in prime condition longer than those fruits not so wrapped is that the paper prevents the accumulated heat given off the entire package from being communicated to other specimens of fruit in the same box or barrel.

It will be noticed by the above thoughts and experience that we are continually learning something about fruit, their nature, and how to handle them to the best advantage with the least possible waste by decay, and that we have much yet to learn. Therefore the fruit grower who does not take a periodical devoted to his specialty, but relies upon his own investigations, must be left far behind in the race toward prosperity.

#### North Canada Lands.

There has been extensive migration of American farmers to Northwestern Canada. Our Canadian neighbors have lost no opportunity to boom Canada farm lands, thus hundreds of thousands of American farmers have gone to the Saskatchewan region far to the north.

A Canadian speaker was invited to address the Western New York Horticultural Society. He occupied much valuable time in a long drawn out report of the fabulous regions of Canada, where he advised Americans to buy farms, whereas he was expected to enlighten our fruit growers in regard to their orchards. Below is a report from this highly advertised Canadian region, which indicates that New York state farmers who have gone to the far north of Canada might better have staid at home:

The Saskatchewan country up in Canada is suffering from a terrific wheat blockade because the railroads are unable to furnish cars. The farmers already have sustained enormous losses. At one town last week the farmers fought in the streets for the privilege of marketing their grain and the mounted police had to be called to maintain order. Fifty thousand bushels of grain are piled in the streets and the implement houses with more than 100 loads standing in wagons with no place to unload it.

#### Are You Ever Discouraged?

There are few people who have lived without having had spells of discouragement. Some of us need to be discouraged. I mean by this that if we are filled with conceit, as many of us are, it is well for us that a portion of this conceit should be removed and discouragement is often the remedy.

But discouragement depresses the vital functions so far that a thoroughly discouraged person cannot enjoy good health. Hope is absolutely necessary to health. If your physician should inform you that

you have contracted a fatal disease, you might become so far discouraged as to shorten your life.

See that man walking along the street. Notice the elastic movement of his feet and his high step, his head erect, his eye piercing and intense, his well-fitting clothes. Everything about this man has an air of success, of achievement. He is encouraged by that which he has succeeded in accomplishing. Notice the other man passing along later. He has a slouchy walk, his shoes scrape the pavement at every step, he is stoop-shouldered, his eyes have lost their gleam, he is pale and wan, and he has an expression of sadness on his face. Everything about this man indicates disappointment. Success causes the heart to beat stronger, the eye to see keener, the brain to comprehend more quickly. Disappointment dulls the man in every fibre.

It should be our duty and pleasure to encourage people, to make them hopeful, for without hope they can achieve nothing. How many ways there are by which we may become disappointed. The wife, the husband, the children, the neighbors, the friends, may disappoint us. We may have expected greater appreciation but it has not been forthcoming. We may have been disappointed in business. If so, possibly it was our own fault. The man who exchanged his valuable eastern farm for western land without seeing the western land was disappointed when he found that his western farm was all under water and was of no value whatever.

We cannot expect to go through life without disappointments. One cure for dispondency is this: look around you and see the sufferings of other people. Think of the wife whose husband has abandoned her and her children and who has fled with another woman. There are thousands of such wives as this mourning today. Think of the many husbands whose wives have run away with other men. Think of poor people suffering from consumption, or other physical ills, who have not the money necessary to enable them to take a vacation in the mountains, but who must work in ill-ventilated offices, groaning with pain every hour. Think of the poor wretches huddled together in the poorhouse. Look at your county poorhouse and see these good people without any of the pleasures of home or home associations. Go into the hospitals and see the sufferings there, and the dead bodies removed each day for burial. Go into the penitentiaries and prisons and see there the hundreds of thousands of able bodied men with nothing to do, with no companions with whom they can converse, with nothing to read or with no taste for reading. Think of the millions perishing from starvation in China and India. A good cure of dispondency is to go out and see what you can do for other suffering people.

#### Wind-Breaks Valuable for Orchards.

Sometimes you can kill two birds with one stone, but it is seldom that you can kill three birds with one stone.

There are three advantages in having a wind-break on the windward side of your orchard. In the first place this wind-break will protect the fruit from being blown or shaken off the trees by the gales of wind which are so frequent in October, just before the winter fruit is in condition to be picked. In Western New York this is the chief advantage of the wind-break.

There are sections of the country where evergreen wind-breaks are planted to protect orchard trees from being injured by cold winds during winter.

The third advantage in wind-breaks is that they are an ornament to any farm.

Now the question asked is: "What kind of trees shall we plant for the wind-break of an orchard?" Other things being equal, I should prefer spruce or cedar trees, for since they remain in foliage all winter they will offer greater protection from winds in winter, in early spring and late fall, after deciduous trees have lost their foliage. Popular trees make far more rapid growth than evergreens of any kind, making quite a wind-break at the end of three or four years. Any kind of forest tree will in time make a wind-break such as the maple and elm. The ash leaf maple so called, or box elder, makes a rapid growth and should make a good wind-break.

If you are not ready to plant your orchard the coming spring but intend to plant one, it will be well to start the wind-break in advance of the planting of the orchard, but I would not delay planting the orchard for the wind-break.

The following is from a correspondent of the Tribune-Farmer: My father had a peach tree that stood close to his house and was sheltered by it from the northwest wind, and it bore good fruit every year, although some winters the thermometer stood at 18 degrees below zero. It is not the intensely cold air that destroys the fruit buds when it is calm and still; it is the arctic air blowing steadily and strongly that freezes not only the buds but some of the small limbs also.

I had a peach tree that stood beside a shed. Snow in the winter bent down one limb to the shed roof and held it there until the snow went off in the spring. That limb was loaded with peaches, and there was not another on the tree. The snow protected that limb from the cold air.

Elijah Camp, whom I well knew and whose farm I have often passed, set out a small peach orchard on a steep hillside that partly sheltered it from the wind. He bent the trees over uphill every fall and laid them flat on the ground, holding them down with slabs, in the spring setting them up and propping them. This practice he continued after they came into bearing, and the snow protection enabled them to bear every year. This method may seem like paying too dear for the whistle, but a few trees might be served in this manner without much trouble.

At a meeting of the Pennsylvania Horticultural Society it was generally agreed that to obtain the best results where there is no natural protection a windbreak should be planted.

#### Results of Fruit Eating.

Man is influenced by his food. I do not refer here to health, for we all know that our health is influenced by that which we eat. I refer to the brutalizing effects of the slaughter of animals by the million and of the depressing influence of having on our tables and on our plate portions of the bodies of birds or of beasts and of consuming these as food.

Who would want a near and dear friend, a son or a husband to be engaged constantly in the business of killing, that is butchering poultry, sheep, pigs, cattle and other creatures. Few of us would want our dear friends engaged in such work, for we realize that it tends to brutality. Who that is keenly sensitive can sit down to a Christmas dinner without a thought of the destruction of animal life caused in the preparations of that dinner as shown by the display on the table in the midst of the guests of the body of a turkey, of a chicken, or of a portion of a lamb, or of cattle. It is impossible for us to separate the idea of consuming the flesh of animals from brutality.

There is no necessity for slaughtering animals in order to sustain human life. Nuts are more nourishing and more economical as food than meat, and far more healthful. Nuts convey no poisons to the human system while meat ever does convey poisons, causing rheumatism and kidney trouble and other ills. Wheat and other grains are more nourishing than meat.

In fruits we have the poetry of nourishment. Fruits are not only delightful foods. They are of medicinal value. While rich hearty foods tend to clog the system, fruits have a tendency to clear the system of posions and irregularities.

Consider for a moment the beautiful supply of fruits on the earth. Think of the vast number of nourishing and healthful fruits. Visit the south and the southern markets and see the many tropical fruits exhibited for sale. Visit the north and see the large number of northern fruits in the market. The abundant supply of these things by a beneficent Creator indicates that they are given us for our welfare. The Creator has not only given us evidence that fruits are for our well being, but has made them tempting to us in beautiful forms and colors, and tempting to our palates through possessing enticing flavors and juices.

I hear much about the increasing prices, but if we will discard meats and study the situation carefully we will not be greatly disturbed over the cost of living. I believe it is possible for a man to exist in good health at an expense of five or ten cents per day. If I were compelled to live on this small sum I would buy a bushel of wheat, a bushel of corn and a peck of rice. These grains can be boiled in water until almost completely dissolved so that when cooled each kernel will be soft and the entire mass will be held together by a jelly-like substance. Either of these three grains thus separately prepared will sustain life and give strength. The attractiveness of these grains so cooked can be improved by the addition of milk or cream. If in addition to such food you can afford an apple by way of dessert, you should not complain that you are not well nourished.

Louisville—The country eating the most sugar and using the most soap is the greatest in the world, according to Dr. Harvey Wiley, who spoke before the woman suffrage convention.

Burlington—The dried apple pie crop will be much greater than usual this year, according to fruit growers, who assert the state crop will be 600,000 barrels against 350,000 last year.

Foresight, as a rule, only comes to a man when he is so old he has nothing to look forward to.

## EDITORIAL—Continued.

## Shall We be Courteous?

How much does it cost per year to be courteous? The answer is, it costs nothing. How much is a man's reputation for being courteous worth per year? My answer is, anywhere from a hundred to ten thousand dollars a year.

If your position is that of a fruit seller, a retailer or peddler of fruit, much will depend upon your courteous manner and treatment of those with whom you come in contact daily in selling fruit. If you are a member of the village church or a trustee of the school, much will depend upon the manner in which you treat those with whom you come in contact officially or otherwise. If you are the conductor of a street car or of a railroad train, if you are governor of the state or a member of the state legislature, or of Congress, you would scarcely be fitted for the work if you were not courteous, and the fact that you are courteous may be worth at least ten thousand dollars a year under favorable circumstances.

What would you do with a discourteous pastor, schoolteacher, supervisor, postmaster or mayor? Supposing everybody should be discourteous, what would happen then? Courtesy, that is a pleasant manner, acts upon the machinery of life much like oil upon a machine. Oil makes the machine run without friction, saves wear and tear, lengthens the life of the machine and adds to its efficiency every moment. Courtesy accomplishes even greater results than oil upon a machine.

## One Advantage of Fall or Winter Plowing.

I have this day, December sixteenth, plowed a piece of ground rather deeply, turning up occasionally a little of the clayey subsoil. Every time I pass this newly plowed land I am impressed with the fact that it will be greatly improved by the dissolving and disintegrating action of frost. Frost as a force is unexcelled by gunpowder, nitro-glycerine or any other explosive. Frost levels mountains. Frost has done marvelous work in transforming the earth into a garden. I have called frost and ice God's plows. The action of the frost through the coming winter on the subsoil which is fully exposed by the recent plowing will be marvelous. An explosion of powder or dynamite would not so thoroughly pulverize these particles of coarse soil as will the action of frost during this winter.

Where there is no subsoil to be exposed, or no clayey soil that needs pulverizing, or no sod that needs turning under to decay, I would not advise fall plowing, for the action of the frosts of winter might loosen some of the fertility which might escape in a sandy or loose friable gravelly soil, but there is much land that is composed of heavy clay, or which, need, deepening, it is necessary to turn up some of the subsoil in running the furrow seven or eight inches deep, and such soil or sodded soil I advise plowing in the fall, or even during the open months of winter. There are many times in midwinter when plowing can be done if the owner of the land is ready to begin work at a moment's notice. But usually it is only the heavy, sodded land that will admit of plowing in midwinter in Western New York.

## What Breed of Hogs is Best?

A subscriber of Green's Fruit Grower asks us this question. It is similar to the oft repeated questions: which variety of poultry is best, which is the best apple, the best peach, the best plum, the best pear, the best quince, the best raspberry, strawberry, blackberry, currant or gooseberry.

Briefly answered, there is no best breed or variety, for the breed or variety that may be best for one man or best for one locality may not be the best for another man or another locality. The poultryman will tell you the best breed of poultry for you is the breed which you like the best, the breed for which you have the best appreciation and love. Supposing a young man should write me asking who is the best girl in the country. Would there not be a wide divergence of opinion in regard to this subject? Of late wise men and women are attempting to decide who are the ten greatest men and who are the ten greatest women, but the question is yet unsettled, for there are too many noted men and too many noted women and they all differ one from another. Can you tell me which bird sings the sweetest, or which flower has the finest perfume, or the greatest beauty, or which painting in an art gallery is the most artistic, or who is the best singer or the greatest orator?

Please notice that I am not treating this question of hogs in a prosy manner. The fact is I have had but little experience with hogs. When I was a boy on the farm the first investment I can re-

member was in buying an old sow with somewhere about a dozen little pigs. My father allowed me to feed this pig and her progeny out of my father's corner, therefore I made considerable profit out of pigs that year. When I started Green's Fruit Farm I assumed it was necessary to keep pigs on the farm. I kept them for two years, but the farm was a busy place. Some one was going in or out of the gates continually and whenever a gate was opened a few pigs would dart out and escape into the cornfield, even if they had to press between the legs of the attendant of the gate and upset him meanwhile. I found that I would either have to give up fruit growing or pigs, therefore I gave up the pigs.

## Our Aim.

The aim of Green's Fruit Grower is to be helpful to the fruit grower, farmer, village or city man, and to his wife and children. We aim to make home attractive, to make life worth living, to preserve health, to enlarge the view.

We believe that a suggestion is often more helpful and effective than a long sermon. We believe in the attractiveness of rural life and strive to interest our readers in the beauties of rural life and its healthfulness and desirability from many points of view. We have not in the past said much about the aim of Green's Fruit Grower for we have felt that every issue explained itself regarding its aim.

## The Greatest Achievement of the Past Year.

The Panama canal, the early completion of which is now assured, is one of the greatest events of the year of 1911. Indeed it may be regarded as one of the greater events of the ages. The World's Peace Conference, the Peace Palace at the Hague, costing twenty-five million dollars, the money given by Andrew Carnegie, are two of the great events of the past year. The completion of the Edison electric battery is one of the great events of the year, though many who are not familiar with electricity may not fully appreciate this great invention. Another important invention is a new electric light or an improvement on the tungsten light, which makes the filament practically indestructible, whereas previously it was as frail as thistledown.



The  
Light Weight  
High Pressure  
Sprayer

## Fruit That Pays 100% Profit

900 barrels of apples off 9 acres. You can do this with your orchard with

## The New-Way GEAR DRIVEN HIGH PRESSURE POWER SPRAYER

TWO OUTFITS IN ONE—AT THE PRICE OF ONE.  
PAYS FOR ITSELF SPRAYING FOR NEIGHBORS.

Herman A. Kelley Fruit Farm, St. Remy, N. Y.

This year I sprayed 1000 trees with our "NEW WAY" gear driven power sprayer, and also sprayed for our neighbors. My "NEW WAY" engine and pump easily maintained 200 pounds pressure and delivered an even satisfactory spray.

I find my "NEW WAY" air cooled engine more than satisfactory for general farm work. I use it to run a large power pump, a large feed cutter and an ensilage cutter.

We are now buying a saw mill, and our "NEW WAY" air cooled engine will run it all winter sawing wood. My "NEW WAY" power sprayer gives me two outfits in one, and is the most practical outfit that a progressive farmer can purchase. I wouldn't know how to get along without it.

Yours very truly,  
W. L. MAY, Superintendent.

WRITE TODAY FOR THE "NEW WAY" SPRAYER CATALOG.

Ask for Catalog S-7  
The "New-Way" Motor Company  
LANSING, MICHIGAN, U.S.A. 10 ASH ST.



Destroy Insects, Prevent Disease,  
Do Not Injure Tree or Delicate Plant

Millions of Dollars Are Lost Annually by Fruit Growers and Vegetable Gardeners  
Because They Do Not Realize the Enormous and Increased Profit in  
Persistent Spraying With Properly Made Insecticides and Fungicides

When it comes to fighting insect pests in your orchard, you cannot afford to experiment with unknown insecticides of doubtful value. If the enemies of your fruit trees get a good start, all the spraying you can do will not control them. If you are fighting San Jose Scale, and use poor materials, the fact that they were poor will likely not be apparent until too late to spray again, and an entire season has been lost, and a number of trees injured if not destroyed. Your first spraying for Codling Moth is done some little time before the insects appear. If they are not destroyed just after hatching, because you have used a poor quality insecticide, you will not know it until too late to kill the first brood, and one Moth which escapes lays about fifty eggs for a later brood. Hence the value of using "Lion Brand" Insecticides and Fungicides of long tested and known reliability.

This is not the idle talk of a poorly posted advertisement writer, but a plain statement of facts that can be proved by any reader of GREEN'S FRUIT GROWER who cares to have it proved.

## Blanchard's "Lion Brand"

## Insecticides and Fungicides

have been the Standard of the World for more years than any other manufacturer in this line has been in business  
BLANCHARD'S PRODUCTS



Lime Sulphur Solution is for San Jose Scale particularly, and Apple Scab. Has a wonderful tonic effect, and makes the bark of apple trees smooth as can be. The same spray that destroys Scab and does not injure trees. Ready for use, and more economical than home made solutions.



The stickiest arsenate made. Preferred for Codling Moth, Curculio, Elm Leaf Beetle and Chewing insects of all sorts, on trees, shrubs, vines, bushes and vegetables, where it is desirable that the poison should remain longer on the foliage than is possible with other arsenicides. "Lion Brand" Arsenate of Lead does not burn most delicate foliage.

"LION BRAND" ARSENATE OF LEAD  
"LION BRAND" PURE PARIS GREEN  
"LION BRAND" LIME-SULPHUR SOLUTION  
"LION BRAND" BORDEAUX MIXTURE  
"LION BRAND" KEROSENE EMULSION  
"LION BRAND" WHALE OIL SOAP  
"LION BRAND" PURE POWDERED HELLOBORE

"LION BRAND" GRAFTING WAX  
"LION BRAND" STICKY BINDING  
"LION BRAND" WEEDICIDE  
"LION BRAND" POWDERED TOBACCO  
"LION BRAND" INSECT POWDER  
"LION BRAND" CATTLE CONTENT  
AND A NUMBER OF SPECIALTIES



Bordeaux Mixture Prevents Blight, Mildew, Rot, etc., from destroying Potatoes, Beans, Peas and Melons; keeps spots and specks off Apples, Peaches and other fruit, and makes crops surer and larger. One gallon to 49 of water.



"LION BRAND" Pure Paris Green contains absolutely not a particle of filler or adulterant of any sort, and is accepted the world over as the Standard.

WE MAKE A SPRAY TO DESTROY EVERY INSECT ENEMY AND FUNGUS DISEASE OF TREES, VINES, SHRUBS, PLANTS AND VEGETABLES  
THE JAMES A. BLANCHARD CO., is the oldest, most responsible and best equipped manufacturer of Insecticides and Fungicides in the World.  
None but the purest and best-for-the-purpose ingredients are used. Every formula is scientifically correct and thoroughly tested to be the most effective, and safest for its purpose. For 23 years we have made nothing but Insecticides and Fungicides.  
Insects and fungus diseases have become so numerous, so destructive, persistent and aggressive that it is admittedly impossible for fruit growers and vegetable gardeners to get crops that can be profitably sold without using Insecticides and Fungicides, and those who grow profitable crops do use them, and know it is plain common sense, and a most economical safe-guard to do so.  
LION BRAND INSECTICIDES AND FUNGICIDES cannot be surpassed in uniform quality, and are guaranteed under the Insecticide Act of 1910.  
We want every one who has a fruit tree of any character, or a bush, or a vine, or a shade tree, and every one who grows vegetables, even if only potatoes, to have a copy of our FREE SPRAYING BOOKLET

wherein we explain why and how spraying insures larger crops and better quality. Just send your name and address to our nearest office.  
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570 Hudson Terminal, New York  
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THE most complete implement book published. Illustrates and describes the best line of farm tools made. Tells when and how to use them. It answers every question about farm machinery. No farmer can afford to be without this book. Write for it today.

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Get Quality and Service—John Deere Dealers Give Both

JOHN DEERE PLOW CO.  
Moline, Ill.



#### The Hamilton Reservoir Orchard Heater



Is the master of them all

Most powerful and most efficient and will protect your fruit crop when all others fail.

THE REGULATED FIRE or heat control and large fuel capacity (3 and 6 gallons), are exclusive features. Write today for full information.

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#### New Labor Saving Farm Machine



Without putting you under any obligation I will send you this new, all steel, shaft drive LUTHER FARM TOOL GRINDER

for try-out on your farm, just to show how easy it is to keep farm tools keen and bright with the rapid Dime-Grit sharpening wheels, how much better you can do your work and the time and money it will save.

Use the machine for 30 Days Free, put every tool in fine shape—if you don't want to keep it, send it back—guaranteed for 5 years. Money back any time within 1 year.

FREE TRIAL OFFER—Write for 40 page book, also circular containing special introductory offer. Write today. Address C. J. Luther, Pres. Luther Grinder Mfg. Co., 2054 Sturz Bldg., Milwaukee, Wis.

#### Plum Growing and Spraying.

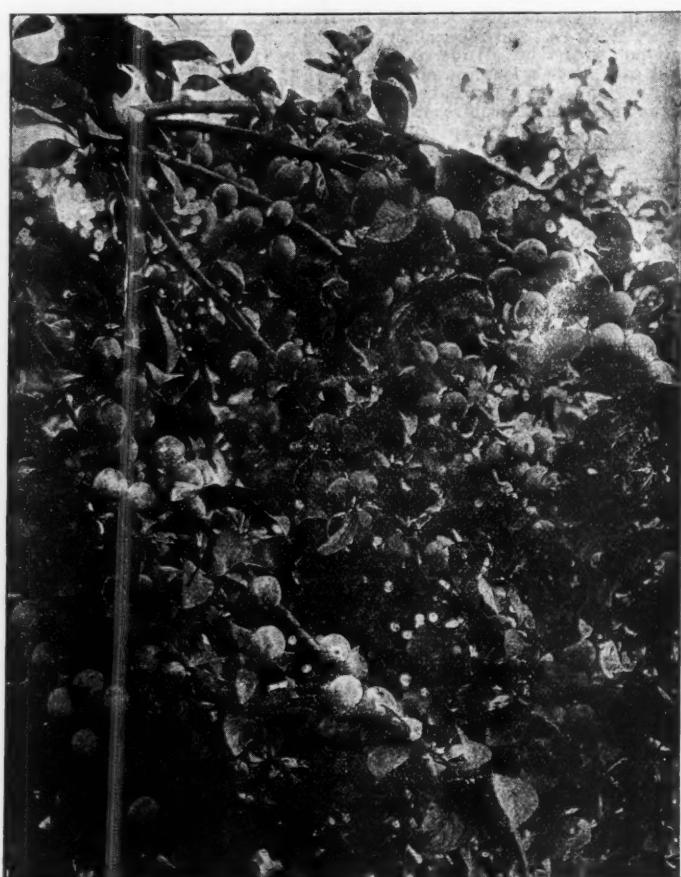
Green's Fruit Grower—I am especially interested in stone and small fruits, and use Bowers L. & S. and Pyrox as sovereign remedies for all their pests and diseases. This particular tree, which is the only Lombard I have now, was sprayed once in early Spring while dormant, with L. & S. for scale, and twice later for curculio and rot, with Pyrox, once directly after fruit had set and again when the plums had attained almost half their size. This gave the second brood of beetles time to appear and the surface of the fruit at that time, was large enough to hold sufficient poison for all their families that came afterwards.

This is not much work when you consider that Pyrox is a combined fungicide and insecticide and has considerable advantage over taking the bugs alive by jarring the trees daily, as some of them won't be taken and return for further destruction; while one tiny bite into a poison covered plum by a beetle, will stop it from ever biting again.

Some growers spray more than I do, but I believe twice for curculio and rot is plenty if the fruit is allowed to become

While each class of fruit has its own requirements, there are two conditions of the soil which should always be present for the best results. One of these is a sufficient amount of humus to serve as a sponge and furnish moisture to carry the trees through period of drought, and a supply of plant food in character and quantity adapted to the needs of the trees. If any or all of the elements are lacking in quantity, it will retard the growth of the trees and their production of fruit. It is especially important that the supply of nitrogen in the soil be well balanced, as this has much to do with the growth of the trees. If deficient, the growth will be checked, but it is an over-supply that is most to be feared; if present in too large quantities, a rank sappy growth will result, which is likely to be injured by the winter. Moreover, such a rank growth of branch and leaf is opposed to the production of fruit spurs.

Except for the danger from frosts, it is advisable to plant the bush fruits upon the lower levels in order to secure a supply of moisture, as they ripen in midsummer when the weather is hot



A BRANCH FROM A LOMBARD PLUM TREE

Photograph sent us by J. S. White of Ohio. Mr. White also sent by express a can of these plums. Every member of our family can testify that these canned Lombard plums were of superior quality. See his article on plum growing in this issue.

large enough to hold sufficient poison before given a second spraying and then thoroughly covered.

The tree I am writing about stands in our yard and is cultivated twice during the season, only three feet around. It is about 7 by 9 feet and bore more than five bushels of fruit this year.

We live in an old-fashioned country place in the outer edge of Cincinnati, and it is the pride of the family and loafing place of the neighbors, especially in "green time."—J. S. White.

Editor's Note: I congratulate Mr. White on his success as a fruit grower. The can of plums was tested at my table and pronounced superb.—C. A. Green.

#### The Soil for Orchards.

Much of the success with an orchard will depend upon the adaptation of the soil. Thus, pears do well upon soils containing a considerable admixture of clay. While apples do well upon soils showing a considerable variation, the best results are obtained when each variety of apple is given a soil especially selected for it, as while Baldwin, Hubbardston and Grimes do best on a medium light soil, Rhode Island Greening and Northern Spy will not be at their best unless they are given a considerably heavier soil.

Cherries thrive well on a sandy loam soil, and will also give good results if it contains some clay, provided it is well drained. Peaches and grapes do well on the same range of soils as is advised for cherries, but will give good returns upon comparatively light soils. Especial pains should be taken to grow these fruits upon elevated sites.

and dry. In locations near large bodies of water there is little danger of injury by spring frosts.

It is sometimes impossible to find a soil on small places, that is satisfactory for an orchard, the land being too heavy or too light. If properly drained, it will often be possible at a small expense to so modify the soil as to adapt it to all classes of fruit by placing about each tree a quantity of clay, if the soil is sandy, or of sand, if the soil is too heavy. This, of course, is not feasible on commercial orchards, except perhaps in small areas, as when there is a sandy knoll in an orchard.—Professor S. T. Maynard.

#### How True.

Today we dodge upon the street  
The autos that would run us down,  
And with a deal of mental heat  
We say bad things, and fiercely  
frown.

Tomorrow in our new machine

We watch the other fellows jump,  
And with a countenance serene  
We smile, "Keep off the road, you  
chump!"

Chicago Evening Post.

New York—Emilio Rossi, employed at the Astor, is what down south would be called a "basket cook." He was arrested because he took a steak and six slices of ham home with him.

New York—Nissen Behar, of the National Liberal Immigration League, after thorough investigation, recommends that all babies coming over in the steerage should be given one soap and water bath.



#### Your Orchard Deserves a Windbreak.

A spruce, pine, fir or arborvitae windbreak around your orchard will eliminate nearly all windfalls and storm damage; go far to prevent frost and permit spraying and picking on windy days. Such a shelter-belt is worth three times as much as the outside row of fruit trees.

#### SHELTER-BELTS WORTH FIVE TIMES THEIR COST.

They conserve moisture, check destructive winds, protect stock from rain, sleet, wind and sun and make excellent fences. They prevent snowdrifts on roads and walks, make houses and barns warmer and save paint.

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Get our 56 page Planter's Guide for 1912. We are evergreen specialists and grow more evergreens than any other firm in the world—as well as timber seedlings, shade trees, shrubs, and hardy fruit trees. Our book and list of 50 Great Bargains free to interested planters—SEND NOW for them.

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Raise water 30 ft. for each foot of fall for economical pumping.

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#### Spraying Pays—If

you use the right solution—a solution that actually destroys the insects. You can stop the ravages of chewing insects by spraying with a dependable solution. Many orchardists, gardeners and farmers are doubtful about the profit from spraying, because their experience has been with cheap, ineffective mixtures. If they used

#### SPRAYS THAT PAYS

#### KEY BRAND

officially adopted by the New York State Fruit Growers Association last year, and again this year, because there was "not a single complaint."

#### ARSENALE OF LEAD

they would know it pays to spray. It gets results; it quickly kills curculio, the moths, borers, canker and root worms, beetles, potato bugs, etc. It is uniform; easy to mix; stays in suspension; acts quickly; sticks like paint to plants; does not clog the nozzles; and does not injure the foliage or fruit. Its Higher Quality and Lower Cost prevent the need of a substitute. Paste or Powder form; small or large packages; shipped in Hard Wood or Steel Containers. Demand Key Brand. Write today for circulars and prices.

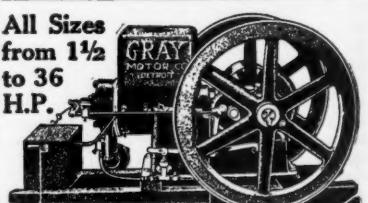
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#### Write for Our Big Engine Catalogue

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A Catalog that will give valuable information about Stationary Engines, their design—construction—care and operation.

Tell you and show you in a clear, easy-to-understand manner all about our complete line of high grade Stationary Engines. Combinations of the very highest quality and lowest possible prices.

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Engines that we can guarantee in the broadest and fairest possible manner.

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Gray Motor Co., 271 U. S. Motors Bldg., Detroit, Mich.



## A PAYING BLUEBERRY FIELD.

## Domestication of the Blueberry.

Not so many months ago the Department of Agriculture published a bulletin dealing with the results of experiments on the domestication of the blueberry. There was a question in the minds of scientists of the Bureau of Plant Industry, whether blueberry culture could be definitely recommended as an agricultural industry insofar as the actual money returns was concerned. To obtain this information experimentally would require many years. It happened, however, that the bulletin has been the means for the department to obtain knowledge of the actual existence of a blueberry plantation near Elkhart, Indiana, more than twenty years old.

This plantation which was examined by officials of the Bureau, was established about 1889 on a piece of sandy bog land containing wild blueberry plants. This bog the owner drained, cleared of brush, and set with wild blueberry plants of bearing age. The plants were procured from large swamps in southern Michigan. They were set in rows at a distance of eight feet each way and were kept clear of all other growth by shallow cultivation supplemented by hand weeding. The plantation has been productive and profitable, the net profits last year being a little more than \$160 an acre. Exact records for the earlier years are not in existence.



## EVER-BEARING STRAWBERRIES.

I have heard much of ever-bearing strawberries and I have been interested in them. I have grown varieties of strawberries that had a tendency to bear throughout the fall season, but I have never yet found an ever-bearing or fall-bearing strawberry that amounted to much. If you will cut the blossoms from any productive variety of strawberry, allowing it to bear no fruit at the natural season for fruiting, the tendency of those plants will be to blossom and produce fruit later in the fall, but I doubt if there is any strawberry known which will produce or can be made to produce paying crops of strawberries out of season.

I planted in 1910 some so-called ever-bearing strawberry plants, for which wonderful claims were made. This year the plants should have borne a full crop, but my foreman tells me that there was no late crop of berries and very few berries in the season when other strawberries were ripening. There are many plants which you can make bear out of season, by cutting off the blossoms or the fruit when it first flowers, such as the sweet pea or Lima bean. If you allow the sweet pea flowers to remain on the vines and produce pods and seed, the blossoms will soon cease to appear, but if you continue to remove the blossoms daily, allowing none to go to seed, the vines will bear flowers all summer.

## Strawberries Fail to Set.

I have examined the blossoming strawberry stems which were forwarded. They do not appear to be affected by any fungous disease, nor have they been attacked by insects. The trouble seems to be one of imperfect pollination. This is probably due to the very unfavorable season we have had. The excessive precipitation at blossoming time is unfavorable to the setting of the fruit. I note that these blossoms are sufficiently well supplied with stamens to insure self-fertilization. It would seem, therefore, that the wet weather was the cause. Strawberries have behaved very curiously this year, says Tribune Farmer. The numerous heavy downpours have been very injurious in some cases, while in others very little harm was done. This irregularity perhaps should be ascribed to the condition of the flowers at the time of the rain. If shedding pollen vigorously, unquestionably the injury would be pronounced. If just before or just after pollination then heavy rains would not influence the setting of the fruit to any marked extent. In certain districts some of our berry fields got badly hit this year. This is a difficulty which the grower is of course unable to circumvent. The best he can do is to alternate staminate and pistillate varieties blooming about the same time in order to favor cross pollination.

to repeat the work accomplished on the wires below. When these side shoots have grown until they nearly meet those from the neighboring vines the ends or growing points should be pinched out. This will cause a thickening of the vines and encourage the development of strong, vigorous laterals. Shortly after growth ceases in the fall, or before the buds show any signs of swelling in the spring, it may be necessary to cut away from half to three-fourths of the previous season's growth, to give the vine and the fruit of the coming season a proper setting. One seldom prunes grapes too severely. Thumb pruning, pinching out unnecessary shoots, shortening back rapid growth and thinning fruit during the early spring and summer should be practiced. Not much time is required for such work.

If the horizontal trellis is used a single stake to each vine will support it until it reaches the middle wire, where it should be topped and made to fork, the two shoots running in opposite directions from the point of contact with the wire. When of sufficient length top these shoots so the energy of the plant will be spent in developing strong canes for the next year's fruitage.

The trouble with marriage is the people never begin to think seriously about it till it is too late.

## Grape Growing.

Nothing connected with grape growing is more important than the work of pruning and training. Remembering that the fruit of this season is formed on the young, tender shoots which grew this season from the matured canes of last year's growth, that the tendency of most grapes is to produce too much vine and to extend the branches to a great length, that the desired object should be to keep the plant within its allotted space and to secure in this space the greatest amount of vigorous fruit-bearing wood; with these points in view we should so prune as to get the desired results. Says Colman's Rural World. After planting the vines cut each one back to two or three buds. When shoots start from these in the spring select the strongest one and tie it to a temporary stake. Remove the other shoots and keep all laterals pinched from the remaining vine as they appear. If the vertical trellis is used the vine may be permitted to branch from the point where it touches the bottom wire. These branches may be directed in a fan shape toward the second and top wires, or a shoot may be trained to the right, another to the left along the bottom wire, and a third shoot in a perpendicular direction toward the second wire. With vigorous vines one shoot may be sent in each direction along the middle wire and a third shoot started toward the top wire

## You Frequently Need a Reliable Hand Spray Pump. Here are two "Demings" that are "WINNERS"!

Many times each season, you need a good hand spray pump. Perhaps you operate powermachines, but you need some hand sprayers besides.

Power outfits sometimes "lay off"—batteries may give out, or you may run short of gasoline. Not the engine's fault, but you'd be mighty glad for some hand spray pumps to fall back upon.

Or if you have several different varieties of the same fruit, the trees will bloom at different times. You've got to spray each tree just after the petals are off, but before the calyx has closed—so you must go over the orchard twice or more. A Deming Hand Sprayer would do such work perfectly—and any other spraying that you have to do. We show two styles here—the "Samson" and the "Planet."

## The Deming "Samson" Spray Pump

A first-class, all-around machine; will do effective work in good-sized orchards. It throws spray with great force, enables the operator to cover a lot of trees in a day, yet works very easily.

## Our New Sprayer, the "Planet."

We need not say much about its strength and durability—the illustration shows it in every line. This outfit works steadily, puts up a heavy pressure, and will stand hard knocks. It is designed for the operator's comfort. The lever is just long enough—you can pump for hours, without getting half as tired as you would if working a horizontal pump.

The "cog" arrangement holds the pump plunger in perfect alignment. The air chamber is large, making pumping easier. A gauge is furnished.

## GET OUR FREE CATALOGUE.

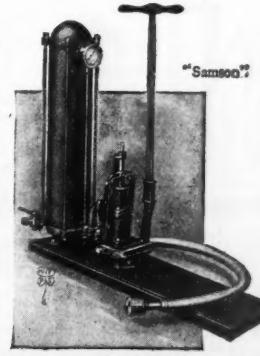
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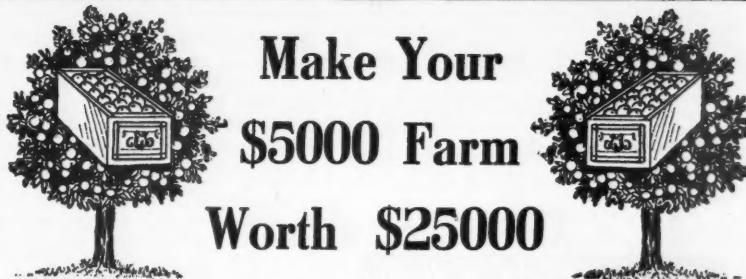


## DEMING SPRAY PUMPS

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\$5000 Farm

Worth \$25000



A farm that yields \$1,000 a year is worth, say \$5,000; if it yields \$5,000 a year, it is worth \$25,000, and so on. It takes good management and many acres to produce \$1,000 net each year raising grain and stock. Good management on only a few acres will produce \$1,000 net a year growing fruit.

## ORCHARDS DO IT; THEY ARE SAFE AND PROFITABLE

With modern methods you can produce large crops of perfect fruit every year. Market demands are such that you can sell this fruit for at least three times the producing cost. Granted that you have the ambition and the energy, and sufficient capital, you are absolutely safe in planting an orchard. If you know how, so much the better; if not, don't let that hinder you, we'll tell you how.

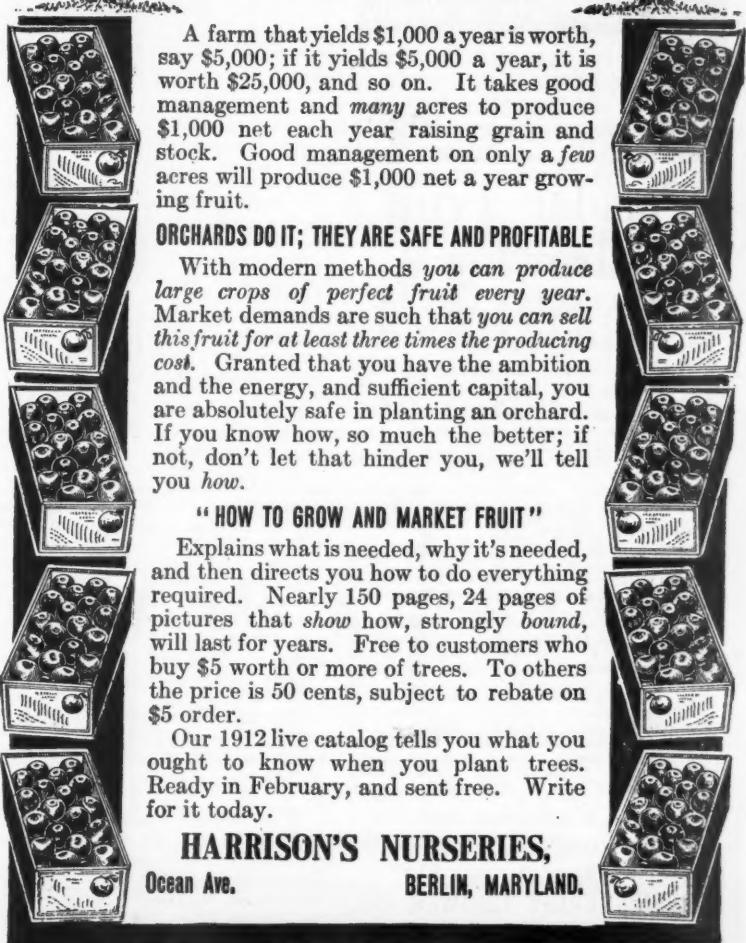
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### A VALUABLE FRUIT BOOK FREE

We have been growing fruit for thirty years, and while we don't know it all, we have learned a good many things. These things we have boiled down for you in our free Booklet. You can get our thirty years' experience in twenty minutes and get it much cheaper and quicker than we got it. This booklet also describes our reliable, tested fruit trees and plants—the best and safest money can buy. Write for a copy today.

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The Fruit Growers' Friend (see testimonial), has wonderful cutting power and great durability. Cuts an  $1\frac{1}{2}$  inch limb with ease without stripping bark or damaging limb. Makes a vertical circular sweep. It makes tree trimming a recreation instead of drudgery and saves time and money. Our guarantee goes with every Trimmer.

Prices.  
Trimmer with 10-foot pole.....\$4.00  
With 6-foot extension, 50 cts. extra  
With saw and 6-ft. extension, \$1 extra.

Having given the "Taylor Tree Trimmer" a thorough trial, I find it all they claim it to be. It simplifies the work and is a great saver both time and money.

M. MESSICK,  
Superintendent of Bixby Park,  
Long Beach, California.

Write for descriptive circular and testimonials from many pleased users.

C. M. TAYLOR CO., Inc.,  
PARIS, KENTUCKY.



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CROP IMPROVEMENT is now a great NATIONAL QUESTION in which not only AGRICULTURISTS are concerned but the whole AMERICAN PEOPLE.

Intensified FARMING is the solution.

AMERICAN FARMS must be made to produce more abundantly; THE THEME IS TO MAKE ONE STRONG STALK GROW WHERE TWO WEAK ONES GREW BEFORE, this means doubling the yield per acre. It is PRACTICAL for such results to be achieved through the CHATHAM SYSTEM. It therefore only remains for the AMERICAN FARMER to profit by the results ESTABLISHED by those who have succeeded.

The story is not only told but DEMONSTRATED in a FREE BOOK, THE CHATHAM SYSTEM OF BREEDING BIG CROPS. A post card written today will bring this valuable book post paid to your home.

"The CHATHAM SYSTEM OF BREEDING BIG CROPS" is now in the hands of 250,000 AGRICULTURISTS who are working to their IMMENSE ADVANTAGE this System which was originated by Mr. Manson Campbell.

This great ARMY OF STRATEGISTS is increasing EACH DAY and for the NATION'S good we want to see the CHATHAM SYSTEM adopted on every AMERICAN FARM. We believe the day will come when planting pure seed will be recognized to be quite as necessary as plowing for the preparation of the next CROP.

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### Popular Fruit Growing

By SAMUEL B. GREEN, B. S. Hort., For.  
Professor of Horticulture and Forestry in the  
University of Minnesota

This book covers the subject of Fruit Culture in a most thorough and practical manner. The great growth and wide specialization in fruit growing has led to the increase of troublesome pests. This subject is explained so carefully that a painstaking grower can quickly recognize the presence of these pests in their formation and check their injuries by applying the methods of extermination so minutely described in the chapters "Insects injurious to Fruits."

Each subject is treated in a most exhaustive manner, every phase of fruit growing is considered from a practical standpoint and the very latest ideas and methods outlined and discussed.

An abundance of new thought has been crowded into these pages. Many special drawings and illustrations are used to more clearly explain the author's methods. Among the many topics discussed are: The factors of successful fruit growing, orchard protection, insects injurious to fruits, spraying and spraying apparatus, harvesting and marketing, principles of plant growth, propagation of fruit plants, pome fruits, stone fruits, grapes, small fruits, nuts, etc., etc. At the end of each chapter are suggestive questions on the matter presented.

Full Illustrated. 5 1-2 x 7 inches  
300 pages \$1.00

GREEN'S FRUIT GROWER CO.,  
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### Big Success With Little Trees.

Mr. Chas. A. Green:—I have been a reader of your grand paper for four years and consider it best of all. I am fond of fruit growing. I have a small place of 4 acres of which I have set two acres into fruit trees also half an acre to strawberries. I planted little peach trees (mail size) last spring as advised by you, and now most of them are 5 foot high. I am well pleased with them. You were right when you said that the mailable size would come into bearing as soon as a two year old would, because I planted some two year olds right beside the small trees and now yours are the best.

I notice fruit pictures in your paper of subscribers which also interest me, but never noticed one from Oregon, the land of fruit, so I thought I would send you one, which might interest you. This is a 9 acre apple orchard and yielded over \$3,000 worth of apples last year. This picture shows the owner and myself standing under a Northern Spy tree, notice how thick the apples are and how the limbs bend to the ground with the fruit.

These apples were all packed in boxes. I am the fellow on the right of the picture holding an apple.

Let me know whenever my subscription expires, I cannot afford to miss a number of your valuable paper.

May the Creator bless you in your noble work is my wish.

If your time is not too valuable I would be pleased to hear from you.—Henry J. Richter, Ore.

years ago it had never borne a bushel of merchantable apples. Mr. Unterzuber recently told a representative of the College of Agriculture of the Ohio State University how this change came about. Three years ago an old man from Iowa came to his farm to see, as he said, the old home place once more before he died. He told Mr. Unterzuber that the apple tree in question had been planted in 1833. This aroused Mr. Unterzuber's interest, and he decided to give the old tree a chance. It was carefully pruned and fertilized with manure and commercial fertilizer. The rough bark was scraped off the trunk and the tree thoroughly sprayed. The next season the tree gave a crop of twenty-four bushels of apples. The fertilizing, pruning, spraying and mulching were continued, with the results last fall as stated above.

—o—  
English Walnuts Grown Freely Near Rochester, N. Y.

The English walnut should have long since been extensively planted as a roadside tree in place of the hundreds of worthless varieties and species to be seen in such positions in all the thickly settled parts of our country. This nut tree should be given a prominent position—not because of the fact alone of its superior ornamental feature, but its nuts command a high price, and this is an incentive for planting and now that it is known that it is thoroughly acclimated and its future certain, to neglect planting as many as possible of this tree is neglecting not alone the community,

### STOKES' SEEDS

The time to find out about seeds is before you plant—not after. Get as many seed catalogs as you like—but be sure to write for mine. I'll take a chance on being of some help to you.

Write today and mention Green's Fruit Grower.

Walter P. Stokes, Seedsman

Dept. H., Philadelphia

### TREES AND PLANTS

We have a very fine lot of them for the coming season. They are TRUE TO NAME and are the best that can be grown. We want your orders so we have made our prices right. Get our catalog and price list. Then give us your order and trust us for the rest. We will treat you right.

### THE ROEDER NURSERIES OSCEOLA, MO.

Money in Buying Best Nursery Stock Grown, trees, vines and ornamentals. None grown that excels ours. Handsome catalog free.

GRAND MERE NURSERY, Baroda, Mich.

Send for our Spray Pump Catalog.  
Green's Nursery Co., Rochester, N. Y.

### OWN A BUSINESS

#### WE WILL HELP YOU.

"I made \$88.16 first three days, writes Mr. Reed, of Ohio. Mr. Woodward earns \$170 a month. Mr. M. L. Smith turned out \$301 in two weeks. Rev. Crawford made \$700 first day. See what they have done, judge what you can do.

LET US START YOU  
in Gold, Silver, Nickel and metal plating. Prof. Gray's new electro machine plates on watches, jewelry, tableware and metal goods. Prof. Gray's New Royal Immersion Process latest method. Goods come in instantly with fine brilliant, beautiful thick plate, guaranteed 3 to 10 years. No polishing or grinding. Every family, hotel and restaurant want goods plated.

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People bring it. You can hire boys to do the plating as we do. Men and women gather work for small per cent. Work is fine—no way to do it better. No experience required, we teach you. Recipes, Formulas, Trade Secrets Free. Outfits ready for work when received. Materials cost about ten cents to do \$1.00 worth of plating.

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New or old. French method—secret process. Nobody doing it. Plenty to do. Clean, quick, easy money maker. We furnish everything for beginning and TEACH YOU FREE.  
Our new plan, testimonials, circulars and SAMPLE PLATING FREE. Don't wait. Send us your address anyway. GRAY & CO. Plating Works, 782 Gray Building, Cincinnati, Ohio.

### FALL BEARING STRAWBERRIES

You can have strawberries from August until November from "Superior" and "Productive" plants. Circulars free. For sale by the Originator, SAMUEL COOPER, Delevan, N. Y.

STRAWBERRY PLANTS 46 varieties. Many varieties in Raspberries, Currants, Early and late seed potatoes—standard vigor hardy varieties, northern grown. Illustrated catalog free. Mayer's Plant Nursery, Merrill, Michigan.

### Marvellous Results from F uit Planting on a Small City Lot.

There are few who realize that an abundance of fruit for the family supply can be grown on an ordinary city or village lot. J. M. Dietrich of Pennsylvania has been buying plants, vines and trees of Green's Nursery Co., for some time. The size of the lot on which he is living is 50 ft. wide by 157 ft. deep, entirely surrounded by a California privet hedge. Part of the lot is occupied by his house and a chicken and pigeon house and vegetable garden, and yet he has growing on this lot 1 tree of walnut and 1 pecan, 5 apple trees, 6 pear trees, 1 quince, 1 apricot, 5 plum trees, 4 cherry trees, 5 peach, 4 currant bushes, 3 gooseberry bushes, 12 rhubarb and one row of asparagus forty feet long.



Scene in an orchard embracing 105 acres of apple and peach trees just coming into bearing. Photograph by Mount Olivet Fruit Co., New Windsor, Md.

He first heard of Mr. Green by an advertisement offering a peach, currant and two roses for twenty-five cents, all sent by mail postpaid. He says the peach tree is now ten feet tall. He has taken two crops from the currant bush. The grape vine has borne fruit and the roses have blossomed freely. He says he takes much pleasure in recommending C. A. Green's trees.

Five or ten dollars or less invested in vines and trees for the home garden may give an abundance of fruit each day of the year to a large family.

### MISSOURI FRUIT GROWERS.

#### Meeting for the First District of the State at Hannibal.

Professor S. M. Jordan, of the State University, at Columbia, in referring to the possibilities of horticulture in Missouri, asserted that they were almost unlimited, says N. Y. Tribune. He said there is practically no land in Missouri that cannot be made profitable. In the Ozark Mountains, the regions of the country noted for rocky formations seem to be well adapted for profitably growing many varieties of fruit. The problem is not in production, but in transportation. He said that he had seen tons and tons of fruit going to waste for lack of facilities for shipping it to market. In one section of the state during the last year apples sold for \$1 a barrel, while less than 125 miles away he paid \$4.75 a barrel. If the surplus could be cared for the remunerative returns would greatly enhance the prosperity of the growers and traders. When we fail to have a superabundance of corn manipulators take advantage of the situation. Many, however, fail to grasp the situation when the apple crop falls short of expectations. One special reason why a man is more valuable on the farm than a mule is that he is supposed to do more thinking.

On the second day of the meeting the Hannibal Commercial Club entertained the fruit growers at a sumptuous banquet.

Between two and three hundred persons gathered at the tables, bountifully supplied with all good things of the season, making a noonmeal highly enjoyable.

The exhibit of apples for the occasion was larger and better in all respects than had been expected. There were also many fine varieties of pears and peaches mixed in with the general fruit exposition.

Prominent among the varieties of apples were the Delicious, Jonathan, Grimes Golden, Huntsman's Favorite, Black Ben Davis, Arkansas Black and numerous other varieties, making prolific returns on the soil of Missouri. Between \$200 and \$300 in cash was awarded in premiums.

### An Old Apple Tree.

W. W. Unterzuber of Belmont County, Ohio, has a seventy-four-year-old Roxbury Russet apple tree that produced this last season fifty-eight bushels and eight pounds of fruit, according to his own statement. Says Tribune. Until three

but yourself and your family and descendants, says American Cultivator.

It takes a trifle more time to secure the first crop after planting than the ordinary kind of farm crops, but an English walnut tree, when large enough to yield from \$5 to \$50 worth of nuts annually, will not occupy any more land than is required to produce a dollar's worth of wheat, or any other kind of grain. In addition to this there is no annual plowing and seeding to be done for each ensuing crop, for when a nut tree is once established it is good for a hundred years at the lowest figures, and increases in value and productiveness with age. If our farmers and others who were planting shade trees twenty-five and fifty years ago, had thought of this and put the idea to a practical test, the roadside trees alone would, today, have many millions of dollars' worth of nuts, which we are now compelled to obtain by importing.

Taking this view of the subject, is it not natural to ask in all sincerity, if it is not about time that a change was made in the kind of trees generally planted along the roads, crossroads and highways, at least? Our ancestors in this country may have been very careless and unwise, or thoughtless, in the selection of the kinds of trees planted for such purposes, and however much we may regret it, we should each strive to remedy defects, keeping in mind that prosperity will also have something to say about our plantings. In the words of Oliver Wendell Holmes, "When we plant a tree, we are doing what we can to make our planet a more wholesome and happier dwelling-place."

### Salt for Stock.

The experienced herdsman or shepherd always provides his animals with an abundance of salt. The best way of providing it is to keep it before them at all times, so they may help themselves. In this way they will adjust their consumption of salt to their needs, and the digestive derangement which occurs where they are starved for this bodily need for a time and then gorged with it, will be avoided. An adequate and wholesome water supply should, of course, also be available.—Pennsylvania Farmer.

Nature is but the pretext; art passing through the individual thought is the end. Why does one say a Van Dyck, a Rembrandt, rather than the thing represented in the picture?—Dupre.

Photograph by Kellerg of Winona, Minn.  
of water on the West shore extends eight miles. Certain varieties of peach trees are planted. Peaches are raised in the garden some years in the center. Beauty but that is doing Nanties is quality, price and most experiments of this by wants to try.

## Electricity as a Stimulant for Plant Growth.

By C. A. Green.

Electricity is a marvelous substance, one which has ever excited the interest and awe of mankind. In the early history of man thunder and lightning were assumed to be expressions of the wrath of an offended God. Even at the present day no one can explain fully what electricity is or just what work it performs in nature. Electricity may have much to do with the movement of the stars and planets. We know that the earth makes an immense voyage every year but what propels it we cannot say. We have harnessed electricity and attached it to our street cars and to machinery.

Recently experiments have been made with electricity as an aid or stimulant to plant growth. It has been discovered that the growth of plants can be hastened by this subtle and mysterious fluid through electric radiation. A galvanized iron wire has been imbedded in the soil of a hot bed and over the bed was placed a network of wires. Very high voltage of electricity was passed through these wires, keeping the plants in the hotbed continually electrified. The results have been remarkable, the growth of plants thus electrified being far greater than the growth of plants not thus electrified. Fungus growth was destroyed by the electric influence.

While Green's Fruit Grower would not advise readers to put in an electric plant at the present time in order to increase the growing of plants, it is well for our readers to know that experiments of the character indicated are going on and that the time is probably coming when electricity will be made available for increasing the growth of farm crops.

Possibly these experiments of electricity on plant growth have been suggested by the fact that it has been known for some time that electricity has been used with good results in physical ailments of man. Men and women are continually and naturally charged with electricity. Electricity has much to do with our health and well being. Hundreds of weak or ailing people are being treated daily with electricity in every large city with beneficial results.

Friend Green:—I am always delighted to read Prof. Van Deman's writings. In his last talk on soils and influences

mens now that weigh 15 and 16 ounces, as the tree bore but few this year owing to the freeze of April, 1910. We are having fall apples going to waste this year and owing to the heat and drought. Our winter apples are on the ground September 20th. We do not raise many winter apples so we must buy for winter.

The drought and hot weather of this summer shortened our strawberry crop one half and our old beds have not recovered and our new plantings have not made plants satisfactorily, so we shall not have as good supply as usual for next spring.

My seven varieties of ever-bearing I have watered and am putting them as two kinds are worth one dollar a dozen and the other five kinds are worth two dollars a dozen. Some of them are loaded with fruit and blossoms at this time. We have had no frosts as yet, but the thermometer was 49 this morning.

My garden of one-quarter acre, gave me 25 varieties of apples, 4 of pears, 6 of plums, 12 of grapes. Plenty of cherries an oversupply of plums, apples and grapes a good supply of grapes in bags on the vines at this writing. Grapes had to be bagged from the birds. My Longfield trees were loaded so the limbs lay on the ground. I enclose a card of it.—Geo. J. Kellogg, Lake Mills, Wis.

## Renovating Old Orchards.

The first thing to do is to thin out the dead wood. This especially in neglected orchards, often amounts to from ten to twenty per cent. and when it is removed makes the tree look entirely different. Says W. C. Forbush of Massachusetts in Am. Cultivator.

The next thing to do is to decide whether the tree is to be severely cut back or simply thinned out. Most old trees have been trained by the principle in vogue twenty years ago to develop high heads. The practice at present is toward a low-headed tree. The older trees in the orchard may be severely "dehorned" if there is a good growth of water spouts on the lower branches to build up a new head with.

If this practice is decided upon, the best plan is to take two or three years in completing the work. Cut back the lower branches and thin out the poorly developed water spouts. Almost always lower the head by removing a few of the unproductive branches. The water spouts should be cut back from one-half to a whole season's growth to start side branches. The second year the higher branches and centre of the tree can be taken out, making a low-headed tree of new wood.

If simply thinning out is decided upon, cut out most of the water spouts and thin evenly over the entire tree, lowering the head if too high by cutting out the upper branches. Avoid taking out too many branches, which would leave the top of the tree looking like a hedge.

When the pruning has been done the tree should be scraped to remove the dead bark. A sharp scie with a short handle makes an ideal instrument for the work. It is mighty important as it destroys the hiding places of the codling moth, and is necessary if spraying is to follow.

All old stubs that have died back should be cut off. All wounds over six inches in diameter should be well coated with tar, being careful not to put any on the cambium layer. The remainder can be coated with paint. Smaller wounds should be coated with paint to prevent dying back and the introduction of some fungous troubles.

Lime-sulphur spray should be applied some time during the dormant season, as it helps to kill all scale and some fungous troubles. The best formula is: Lime, twenty pounds; flowers of sulphur, eighteen pounds; water, fifty gallons. Boil about forty-five minutes to one hour or until the solution is a rich amber color. This can be used full strength in winter but must be diluted to about one-fourth that strength in summer.

## HUMOROUS.

"Is there a new baby at your house Mamie?" "No'm; 'tain't new. It's all red and creased up, like it's second hand."—Baltimore American.

Little Freddie sat looking at the new baby. Then he asked: "Mama, what is the baby's name?" "The baby has no name." "Well then, how does it know it belongs to us?"—Woman's Journal.

The Shortstop: "Going to try out that new boy for the team?" Captain: "No. The minute I heard him spell plenipotentiary, erysipelas and trigonometrical I knew he wouldn't be no use on a ball nine."—Puck.

Photograph of our correspondent, George J. Kellogg of Wis., taken in his apple orchard. See his article in this issue.

of water on atmosphere, reminds me of the influence of Lake Michigan, on the West shore, the milder temperature extends eighteen miles west of Milwaukee, certain varieties of apples, plums, pears and Peaches can be grown at Pewaukee that cannot be relied on farther from the lake. It is true. Pewaukee Lake may add its influence, but the same conditions are felt eighteen miles west of Racine where there are no lakes.

Peaches are grown by B. R. Bones at Racine, one mile from the lake. He has from 250 to 400 bushels almost every year. Quite frequently we have seedling peaches here at Lake Mills, 60 miles west of Lake Michigan, but that is owing to a succession of mild winters. Seedling trees in the gardens of our city bear 2 to 4 bushels some years. Pears cannot be relied on in the central part of Wisconsin. Flemish Beauty is considered most hardy, but that has killed with me while Bartlett is doing well, better than this Cedes Nanties is the best every way, size, quality, productiveness, free from blight and most hardy of fifty kinds I have experimented with. I would send scion of this by mail for a dime to any one who wants to try it. I have some large speci-

"Truth," said the orator who quotes, "is at the bottom of a well." "Yes," replied Farmer Cointossel; "an' ain't it discouragin' how the well hev been runnin' dry this Summer?"—Washington Star.

Send for this

## FREE BOOKLET

## "Spraying Simplified"



We want every farmer to have this book, which tells in a clear, concise, simple way how to control the insects and fungi that rob fruit-raising of its profit.

This is a valuable reference book for the farmer and small fruit grower. It tells you how to know the "enemy" as well as what to do to him. Its 68 pages make one of the most complete and comprehensive booklets on spraying ever issued.

*It's Free if you write for it now—a postal will do.*

**The Vreeland Chemical Co.**  
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## MAKE EVERY ACRE NET \$200 EACH YEAR.

An acre of berries will bring more net profit than ten acres of corn or wheat—WITH LESS WORK; five acres, more income than the salary of the average state senator. With ten acres you should live well and put \$2000 a year in the bank.

## YOU CAN'T GET INTO A BETTER BUSINESS.

Berry growing is a solid, permanent business. Berries have grown to be a necessity. City people are eating more and more. Prices are double what they were ten years ago.

Learn the facts about the great GIBSON STRAWBERRY and the GIANT HIMALAYA BLACKBERRY. Knight's Book on Small Fruits tells you all about these and many other profitable varieties. Don't make any definite plans for your 1912 planting until you have seen one of these books. They are free for the asking as long as they last.

Box 101

DAVID KNIGHT &amp; SON, Sawyer, Michigan.

## SEED CORN 146 BU. ACRE

**DIAMOND JOE'S BIG WHITE**—A strictly new variety. None like it. It is the Earliest and Best Big White Corn in the World—Because it was bred for most Big Bushels, not fancy show points; because grown from pure inherited stock; every stalk bearing one or more good ears, because scientifically handled, thoroughly dried and properly cured and had the most rigid inspection. Also all other leading standard varieties at **FARMER PRICES. OUR BIG ILLUSTRATED FARM AND GARDEN SEED CATALOG** mailed FREE. A postal card will bring it to you. Write for it today. Address, RATEKIN'S SEED HOUSE, Shenandoah, Iowa. Box 11



## FRUIT TREES 800,000 APPLES 675,000 PEACH

We grow what trees we sell direct to the planter from bearing orchards at wholesale prices which are 75% less than you pay agents and dealers. Every Tree as Represented and Guaranteed True to Name. Free from San Jose Scale, fresh dug, the best for orchard planting and personal attention given each order. Everybody write for free illustrated catalogue. Established 26 years; 250 acres; capital \$60,000.

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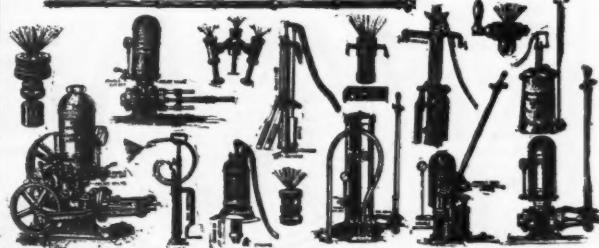
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## MYERS SPRAY PUMPS AND NOZZLES

are made in many styles and sizes to meet every spraying need from the small knapsack or bucket outfits to the large power rigs. They have all been developed in line with modern spraying requirements and have long since passed the experimental stage. We show here a few types of our complete line of Spray Pumps, Nozzles, Bamboo Extensions and Accessories. Our new catalog No. Sp-12 will give you full descriptions and prices.

WRITE FOR IT NOW.



## F.E. Myers &amp; Bro.

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When you write advertisers Please mention Green's Fruit Grower.

# My Farewell Car

By R. E. Olds, Designer

**Reo the Fifth**—the car I now bring out—is considered by me as pretty close to finality.

So close that I call it "My Farewell Car." I shall let it stand as my topmost achievement.

Embodying here are the final results of my 25 years of experience.

I have spent 18 months on Reo the Fifth. For three months I stopped the whole Reo production to devote all of our efforts to this one car.

The future is bound to bring some minor changes—fenderols and fashions. But in all the essentials this car strikes my limit.

Better workmanship is impossible, better materials unthinkable. More of Simplicity, silence, durability and economy can hardly be conceived.

I consider this car about as close to perfection as engineers ever will get.

## My 24th Model

This is the twenty-fourth model which I have created. My first was a steam car, built in 1887—25 years ago. My first gasoline car was built in 1895—17 years ago.

My whole life has been spent in building gasoline engines—the Olds Gas Engines, famous half the world over. My engine-building successes gave first prestige to my cars. For the motor, of course, is the very heart of a car.

So it came about that tens of thousands of motorists have used cars of my designing. They have run from one to six cylinders, from 6 to 60 horsepower. They have ranged from little to big, from the primitive to the modern luxurious cars. I have run the whole gamut of automobile experience.

In the process of sifting I have settled down to the 30 to 35 horsepower, 4-cylinder car. That is, and will doubtless remain, the standard type of car.

Greater power is unnecessary; its operation expensive. Weight, size and power not needed bring excessive cost of upkeep. Most men who know best, and who can own good cars, are coming to this standard type. So we make for the future just this one type of car.

And in this new car—called Reo the Fifth—I have embodied all I know which can add one iota to the real worth of a car.

## My Thousand Helpers

But Reo the Fifth, despite all my inventions, belongs to other men more than to me. A thousand men have contributed to it. I have searched the whole world to secure for each part the very best that any man has discovered.

For that is the essence of motor car designing—to learn what is best and adopt it. No modern car owes more than a trifle to the genius of any one man.

So this car is not mine—it is merely my compilation. It shows my skill in selection—in picking the best—more than my skill in designing. It shows, above all, what my myriads of cars in actual use have taught me.

And I frankly confess that I owe a great deal to the many brilliant designers whom it has been my good fortune to associate with me.

## Where This Car Excels

In Reo the Fifth you will find many good features found in no other car. You will find all the best features used in other up-to-date models. You will find them combined with style, finish and appearance which marks the very latest vogue.

But the vital advantages of this new car lie in excess of care and caution. In the utter exactness—in the big margins of safety.

One of the greatest lies in formulas for steel. I have learned by endless ex-

periment—by countless mistakes—the best alloy for each purpose.

All the steel that I use is now made to my order. And each lot is analyzed to prove its accord with the formula. Experience has taught me not to take any chances.

I used to test gears with a hammer. Now I use a crushing machine of 50 tons capacity. And I know to exactness what each gear will stand.

I took the maker's word on magnetics at one time. Now I require a radical test, and I have found but two makes which will stand it.

The axles are immensely important. I use Nickel Steel of unusual diameter, and fit them with Timken Roller Bearings.

The carburetor is doubly heated—by hot air and hot water—for the present grades of gasoline.

The car is over-tired.

So with every part. From start to finish this car is built under laboratory supervision. The various parts pass a thousand inspections.

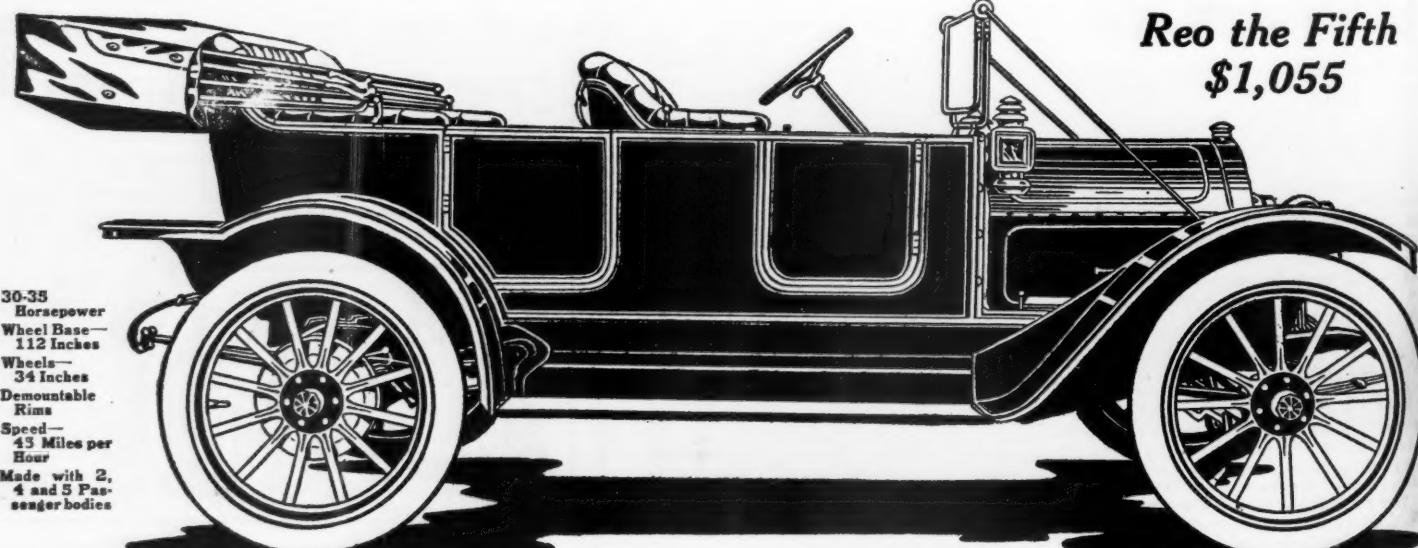
It is one thing to build a theoretical car, to meet all expected conditions. It is another thing to build one to meet actual conditions. The unusual and unexpected bring out a car's weakness.

The best thing I have learned, in these decades of experience, is the folly of taking chances.

I had one of these new cars run for ten thousand miles—run at top speed, night and day, on rough roads. That is equal, I figure, to three years' average usage. Then I took the car apart, and I found every important part in the whole car practically as good as new.

That's where this car excels—in that excess of caution taught by 25 years of experience, I am not abler than other designers. I have simply been learning longer.

**Reo the Fifth**  
**\$1,055**



Top and windshield not included in price. We equip this car with mohair top, side curtains and slip-cover, windshield, gas tank and speedometer—all for \$100 extra. Self-starter, if wanted, \$25.00 extra.

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# The Price of \$1,055

It seems an anomaly that this Farewell Car—my finest production—should sell for \$1,055. But of all the new accomplishments shown in this car I consider this price as the greatest.

In this final and radical paring of cost I feel that I leave my greatest mark on this industry. And nothing else done by me has required so much invention, so much preparation.

The time has come when motor cars must be sold on a close-price basis. Cost, profit and selling-cost must all come down.

The furores of the future will be due to efficiency—to enormous production, to modern equipment, to automatic machinery.

The time is passing when a doubled price indicates a double value. Men are learning how to judge a car. They are not content to pay more than the market for the utmost one can get.

## The Sweeping Change

I have sold thousands of cars at what would now be four times the cost of making. I have seen men stand in line and pay a bonus to get them.

I have spent in the making—in proportion to value—twice what I spend today. But those were days of experiment, of constant change. A wealth of machinery, tools and jigs went every year to the scrap heap. And they were days of hand work, of little automatic machinery.

I have seen overhead expense, in the days of small outputs, cost twice as much as labor. I have seen selling expense cost as much as materials. The prices of those days are now extremely unfair.

**R. M. Owen & Co. General Sales Agent for Reo Motor Car Co., Lansing, Mich.**

Now every operation in the Reo plant is performed by special automatic machinery, invented by us, built right here in our shops. Some single machines divide the labor cost by fifty. And they multiply exactness, too.

Now the Reo is standardized, so machines are not changed. Now we build but one chassis in all this great plant. That fact alone saves nearly \$200 per car.

Now the whole of the car is built under one roof, so we pay no profits to parts makers. Now we make thousands of cars where we used to make hundreds, so overhead expense is a trifle.

Selling expense, because of the Reo's prestige, is a fraction of what it was. Profit per car has been cut to the minimum. Our dividends are paid by enormous production.

Those are the reasons for this price on Reo the Fifth—a price far below any car in its class. I believe the dominant car must give most for the money. And I want that to be Reo the Fifth.

## The Price Not Fixed

But the price of \$1,055 is not irrevocable. All our contracts with dealers provide for advance on two weeks' written notice.

Materials are now at their lowest prices in years, and but little advance will make this price impossible. We have pared every cost to the limit. We have even discounted the prospect of a doubled demand. So added cost, if it should occur, must be added to our price.

But the price today is \$1,055. And the price will be kept this low as long as it can be. But no price can be fixed for six months in advance without leaving a big margin, and we haven't done that.

## About Skimping

Standard cars which compare with Reo the Fifth are selling today up to \$2,500. This difference in price naturally leads to the question as to whether we have skimped on the Reo.

We ask you to judge that for yourself. Our catalog—just out—gives complete specifications. It states the material used in every vital part. Please make your comparisons; or, if you can't do it, have a good engineer make them for you.

If there is one device better than I employ, I don't know it. If there are better materials for any part or purpose, I have failed to find them out. If any maker uses more time, skill or care, I do not know how he employs it.

After 25 years spent in car building I consider Reo the Fifth, in every respect, as my limit. I would not know where to add one whit of real value, whatever price you would pay.

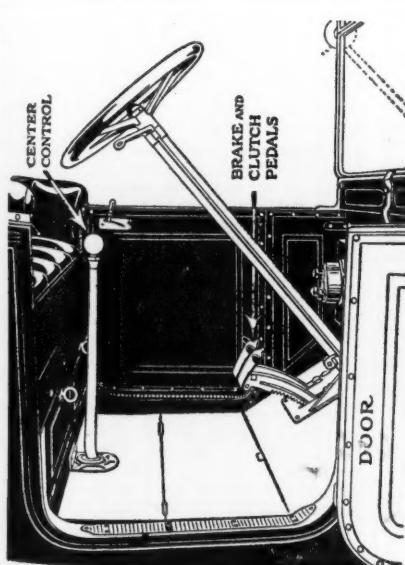
Note the generous tires—the hair-filled genuine leather cushions—the nickel-trimmed engine—the 17-coated body. In every part of the car, both the seen and unseen, I have put that final touch.

No, this car is not skimped. I am putting it out as the cap-sheaf of my career. All my prestige is at stake on it. This is my Farewell Car, and I am glad to think that tens of thousands of motor car owners are going to judge me by it.

## New Catalog Ready

Our catalog gives all the specifications, and shows the three styles of bodies. It gives details of all the new features.

Reo the Fifth, at this radical price, will be the season's sensation. The facts about it are exceedingly interesting. Write us today for the book. We will then direct you where to see the car.



## The Center, Cane-Handle Control No Side Levers—No Reaching

The most unique feature in Reo the Fifth is this center control, shaped like a cane handle. It is our invention—our exclusive feature.

This car has no side levers—nothing in the way. The driver gets out on either side as easily as you climb from the tonneau.

Both brakes are worked by foot pedals. Either or both of them can be applied without taking the hand from the wheel.

The gear shifting is done by this center cane-handle. The handle straight up means transmission on neutral. One slight motion takes you to low speed, another to intermediate, another to high speed and another to reverse.

Each of these movements is in a different direction. And the top of the handle, in changing from one to another, hardly moves more than three inches. So the handle is not in the way.

No danger of gear stripping. No noise at all. There was never before a gear shifting device even one-fourth so convenient and simple.

## Left-Side Drive

In Reo the Fifth the driver sits—as he should sit—on the left-hand side. He is then close to the cars which he passes. He is on the up side of the road. He can look behind in making a turn.

This has always been so on electrics. But with gasoline cars, where there are side levers, the driver is compelled to sit on the right side. And that means the wrong side for driving.

Front doors have now made side levers impracticable. They come too close to the door. This fact is compelling a center control, to which all cars must come. And this center control enables the driver to sit on the left side—on the proper side of his car.

It is so in Reo the Fifth. But, in addition to that, we have rid the car of both the brake lever and gear lever.

Those are a few of the ways in which this new Reo model shows its up-to-dateness.

**The world's greatest artists  
make records only for the  
world's greatest musical instruments—  
Victor and Victor-Victrola**

As the world's greatest opera stars make records only for the Victor, it is self-evident the Victor is the only instrument that does full justice to their magnificent voices.

And as the Victor reproduces the actual living voices of these famous artists in all their power, sweetness and purity, it is again self-evident the Victor is the one instrument to provide you not only the gems of opera but the best music and entertainment of every kind.

Whether you want to hear Caruso or Melba in grand opera, or "Alexander's Ragtime Band", or "Put On Your Old Gray Bonnet", or "Nearer My God to Thee", or "Onward Christian Soldiers"—whatever you want—you get it at its best only on the Victor.

Hearing is believing. Any Victor dealer in any city in the world will gladly play any Victor music you wish to hear and demonstrate to you the wonderful Victor-Victrola. Write to us for catalogs.

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**How to Spend Winter Evenings on the Farm.**

The man or woman who can best answer this question will be doing a valuable service. Green's Fruit Grower will be glad to receive brief suggestions on this point for publication.

When I was a boy on the farm my greatest delight on winter evenings was in reading stories published in the New York Ledger. My parents were opposed to my reading those stories for they feared I would form a habit which would not be easily broken, but their fears were groundless, for in later years I outgrew my love for such stories. The taste of children and of the grown folks varies. We are not all fond of reading, therefore there should be in every home other means of passing away the evening hours during winter. There should be musical instruments, or at least one instrument, the more the better. Why not start a family singing school and get some of your neighbors interested in it and meet together at your home once or twice a week regularly to practice singing accompanied by instrumental music. Many who do not enjoy reading themselves would enjoy reading aloud by some competent member of the family, but the selection for this reading should be made with great care so that it will be full of interest. Much will depend upon the comprehension of the reader of the myself and others to express myself in

**Award of Prizes Offered by Green's Fruit Grower for the Best Three Articles on Fruit Growing.**

Green's Fruit Grower has offered three prizes for the most helpful articles or suggestions on the subject of fruit growing. The first prize of Five Dollars has been awarded to J. J. Feldman of Missouri; the second prize of Three Dollars was awarded to Robert A. Lamson of Wisconsin; the third prize of Two Dollars was awarded to R. E. Hancock of Kentucky.

The result of this offer of prizes indicates that fruit growers can write instructive and suggestive letters, but that as a rule they do not unless urged to do so in some special manner. The Bible says "To communicate forget not." The meaning of these words is "Do not forget to be helpful or mindful of others." It is almost sinful to go through life learning from your own costly experience and giving the world no benefit from what you have learned. One of the sins of mankind is the general lack of communicating one with another. I am often asked why I spend so much time in noting down subjects and preparing articles for publication. Many people do not seem to understand my motive in writing editorials for Green's Fruit Grower and other articles for various publications. My answer is that I feel compelled in justice to



Photograph of Duchess dwarf pear trees recently transplanted, sent in by a friend of Green's Fruit Grower. No fruit trees bear so quickly after planting as the dwarf pear. I know of no more interesting object in the way of fruit than a young dwarf pear tree loaded with large and beautiful pears, such as are shown in the above photograph. For this reason I advise planting a row of dwarf pear trees through your garden, planting the trees only three feet apart in the row. I have such a row of dwarf pear trees planted in my garden at Rochester, N. Y. These trees have fruited each year for many years and still are not crowded though the trees were planted only three feet apart.

thoughts of the writer. It is a great accomplishment to be able to read fairly well, thus different members of the family should be asked to read in turn.

In every home, especially where there are children, there should be games of some kind to occupy their attention during the winter evenings. There are many harmless games of cards, such as Authors, Flinch and Pit. There is a new game called Base Ball, played with picture cards, which is of great interest to boys. If the parents have no objection to billiards, which of itself is an innocent game, fairly a good billiard table can be made at home with a board bottom, the cushions attached to the rails to be made of one-half inch rubber tubing. Ten pins can be set up on the floor and played in that way. Quoits, bean-bags, crokinole, caroms, chess and checkers are all excellent indoor games. Parents should not consider the question of pastime for winter evenings at home a frivolous question. It is in fact a vital question. Anything that we can do to make home attractive is money and time well invested.

If a father can afford to own a piano or organ he should certainly have one. Some families are literary, others are musical, others are fond of games, so we see that each family must decide for itself just what should be done to make the home attractive during the long winter evenings. Do not forget to have a supply of corn for popping, molasses for making candy, and bright red apples of good quality to bring out in the way of a lunch during latter part of the evening. Do not forget to hang attractive pictures on the walls of your home and in the bedrooms of your children. Do not be too hasty in finding fault if the young people make a little noise about the house occasionally, for it is far better for them to be noisy than at the village tavern. Do not forget to be friendly and sociable with your neighbors.

Some men are so methodical that they even expect their opportunities to travel on schedule time.

Mrs. Elsie P. Buckingham of California, owns and manages one of the largest orchards in the world. She is a New York woman, having been born and brought up in the Genesee Valley. She began her career as a fruit grower by purchasing 250 acres of land in the valley of the Vaca river. She planted more than half of the tract in fruit trees of various sorts, which paid her so well that she increased her holdings by 1,000 acres. Mrs. Buckingham joined with A. T. Hatch, the "fruit king," in bringing the first refrigerator cars to California.



**Aunt Lydia's Household Hints.**  
Written Especially for Green's Fruit Grower.

The good parts of old coats and pants can easily be made into a servicable rug for some bare spot of the kitchen. Cut them into rectangles about three by five inches, and sew them together on the machine in brickwork style. Line with two thicknesses of burlap and bind with black cloth. A pretty rug for almost nothing.

Invest in a pair of cotton gloves, such as the men wear, that can be bought for about ten cents. Face the palms and fingers with some thick flannel, and wear them when handling things in the oven on baking days. This is a great saver of intense heat from the hands.

Place an old rug at the back door, keep there an old broom, and fix a scraper on the top step. Then insist that the men folks use them before entering the house. If they forget this a few simple reminders will be sufficient, and many a backache will be saved from scrubbing floors.

Cover the inside of the kitchen closet door with black or dark colored cardboard by tacking firmly at the corners. Upon this paste pictures that please your fancy, selecting those that are inspirational and of varying shapes and shades. A good assortment can be gathered from the old magazines. Every time you open the closet you will receive new inspiration.

Have a small cabinet or a bureau drawer to contain simple and reliable remedies, such as epsom salts, Jamaica ginger, vaseline, quinine pills, etc. Add a bottle of good liniment and a package of court plaster. There should be some rolls of soft cotton cloth for bandages. These simple precautions, if ready at a moments notice in case of accidents or sudden sickness, may be the means of saving many dollars doctor's bills, and may possibly be the means of actually saving a life.

**A Compliment To Women.**—An eminent writer, a man who has recently re-

turned from an extended European trip, writing on marriage, says that the great achievement of man is to find a wife. He says that men should have no trouble in finding wives for "Ninety-nine out of every hundred women are good," using the writer's own expression. Since we know that ninety-nine out of one hundred men are not good, this statement places woman on a very high plane.

It is my opinion that there are more good men and good women in the world than is generally supposed. By reading current history in the average newspaper, which is filled with the erratic actions of mankind in every part of the world, we may be led erroneously to the conclusion that the race of mankind is going to the dogs, that is to the eternal bow wows.

I have given man equal standing with woman as regards moral tone. I have not in my limited experience been satisfied to place woman far in advance of man in moral attainments, but possibly I have been wrong in my estimate. On one point I have felt secure in my position, which has been that a thoroughly demoralized woman is worse than a thoroughly demoralized man, but even in this I confess that I may be mistaken, for there are some awfully mean men on this earth.

**There Are Many Uses for Salt.**

A little rubbed on the cups will take off the tea stains. Put into whitewash it will make it stick better. As a tooth powder it will keep the teeth white and the gums hard and rosy. It is one of the preventives of diphtheria, if taken in time. Use salt and water to clean willow furniture; apply with a brush and rub dry. Prints rinsed with it in the water will hold their color and look brighter. Two teaspoonsfuls in half a pint of tepid water is an emetic always on hand, and is an antidote for poisoning from nitrate of silver. Silk handkerchiefs and ribbons should be washed in salt and water and ironed wet to obtain the best results. Food would be insipid and tasteless without it. Hemorrhages of the lungs or stomach are promptly checked by small doses of salt.

**A German Allegory.**

On a recent trip to Germany, Dr. Harvey Wiley, the government's pure-food expert, heard an allegory with reference to the subject of food adulteration which, he contends, should cause Americans to congratulate themselves that things are so well ordered in this respect in the United States.

The Germany allegory was substantially as follows;

Four flies which had made their way into a certain pantry, determined to have a feast.

One flew to the sugar and ate heartily; but soon died, for the sugar was full of white lead.

The second chose the flour as his diet, but he fared no better, for the flour was loaded with plaster of Paris.

The third sampled the syrup, but his six legs were presently raised in the air, for the syrup was colored with analine dyes.

The fourth fly, seeing all his friends dead, determined to end his life also, and drank deeply of the fly-poison which he found in a convenient saucer.

He is still alive and in good health. That, too, was adulterated.—Lippincott's.

Cincinnati friends of Mrs. William H. Taft who have been traveling in Ireland have sent to her for planting in the garden of the White House cuttings from three of the largest and oldest flowering trees in the world. They come from the estate of the Knight of Kerry on the Island of Valencia, and are from the fuschia tree which is long past a century in age and measures two and a half feet around; from the oleander tree which, 200 years ago, was transplanted from an island in the Ionian Sea, and from an Acacia tree, which towers over oaks and sycamores and is a mass of pink, feathery blooms in mid-July. All the cuttings have been rooted and are likely to thrive in their new home.

**House Notes.**

White pepper is preferable to black for seasoning chicken soup.

Crisp celery should be served with cold meat. It is a nerve tonic.

If a knife is lightly heated it will cut bread and cake much more easily.

Flour sprinkled generously over suet will make the chopping process simpler.

Keep tacks in bottles. It saves opening many packages to find a particular kind.

Except in ordinary cases every sick room should have some sunlight every day.

To keep cheese moist and fresh and free from mould wrap in cloth wet with good vinegar.

Fat will not burn if a crust of bread or piece of raw potato is placed in the kettle with it.

To clean white paint dip a cloth in hot water, then in bran and rub it. Rinse with cold water.

When cleaning house use plenty of turpentine in the scrub water. It is certain death to moths.

In cutting garments it is sometimes better to fasten the pattern in place by weights instead of pins.

A teaspoonful of glycerine given in a wineglass of hot milk will relieve a severe paroxysm of coughing.

Left-over cereals need not be wasted. They are easily fried like mush and eaten with syrup or honey.

Cheese wrapped in waxed paper and put in the refrigerator will keep for a week and look as if freshly cut.

For washing coarse clothes soft soap is the best, and has the advantage of going further than yellow soap.

The sediment from javelle water is excellent for scouring.

To clean gilt, try touching it up a little at a time with a camel's hair brush wet in alcohol. Don't let it dry, but rub off with a flannel, which should be changed frequently.

Never scrape cooking utensils of any kind. Clean them out as much as possible, fill with water and washing soda, cover and allow them to steam. They will then clean easily.

Before washing silk stockings, soak in borax water, then wash gently in tepid soapsuds. Don't wring, but squeeze out and after rinsing in several waters hang up to dry.

In cooking broilers all the juice is saved and much of the flavor otherwise lost is retained by completely brushing over the fowl with olive oil before submittitg it to the flames.

When carpets are not to be taken up they can be greatly freshened by washing with water to which a little ammonia has been added—not over a tablespoonful to a pail of water.

Clothes will not dry out so quickly if sprinkled and packed in a tin boiler the night before ironing day. They should be packed as tight as possible and the top placed on the boiler.

CROUTONS for soup are most easily made by cutting stale bread about half an inch thick, buttering it thickly on both sides, cutting in half-inch squares and baking in the oven until brown.

After washing woolen socks, dry them on frames to prevent them shrinking. They should be washed in warm suds of white soap with a little borax added, but should not be rubbed on a board.

An apple pie made without the upper crust is a pleasing change. Line the pie plate and bake the under crust; fill with apple sauce, seasoned to taste, and cover the top with whipped cream.

Housekeepers who get butter in the jar or tub will find that the use of a little charcoal will insure having the butter sweet. The charcoal is placed in a paper bag and put into the jar.

For a cream whip which is easily made fill sherbet glasses half-full of preserved fruit. Heap them with whipped cream that has been flavored with vanilla or wine and spread the tops lightly with cocoa, cocoanut or minced nuts.

To get better results from a hot-water bottle wrap it in a soft cloth wrung out in hot water. This will give a steaming heat, and is much more effective for neuralgia, etc., than the dry heat of the bottle as ordinarily applied.

Equal parts of milk and luke-warm water are excellent for sponging palms.

Paint and varnish can be easily removed from the hands by first rubbing well into them some grease or lard, then washing with soap and water.

A plain cloth dipped in hot water and then in a saucer of bran will clean white paint and not injure it. The bran acts like a soap on the paint.

The man who can continue to be brimful of courage and enthusiasm even when everything is against him, is the man who is going to win, and win splendidly.

A well known man who has tried both, declared recently that a happy home with a loving wife and interesting children, even though that home be inexpensive, is worth more than a carload of fame.

**VICTOR SANITARY CHURN**

A combination of three churns in one. Will churn from 2 quarts to 4 gallons without a adjustment. Something else we will do. All metal except lid. Easy to handle, easy to clean. Any child can operate it and churn butter in 5 minutes. FULLY GUARANTEED.

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Send us a sample of your hair and we will mail on this beautiful 22-inch human hair switch to match. If satisfactory send us \$1.50 any time within 10 days, or send \$3 to your friends for \$1.50 each and get yours absolutely free. Extra shades a little higher. Souvenir catalog showing latest styles of fashionable hairdressing, etc. on request. Enclose 3c postage. Marguerite Gilly, Dept. 157, 115 S. Dearborn St., Chicago

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Cleanses and beautifies the hair. Promotes a luxuriant growth. Never fails to restore Gray hair to its youthful color. Cures scalp diseases & hair falling. 50c, and \$1.00 at Druggists.

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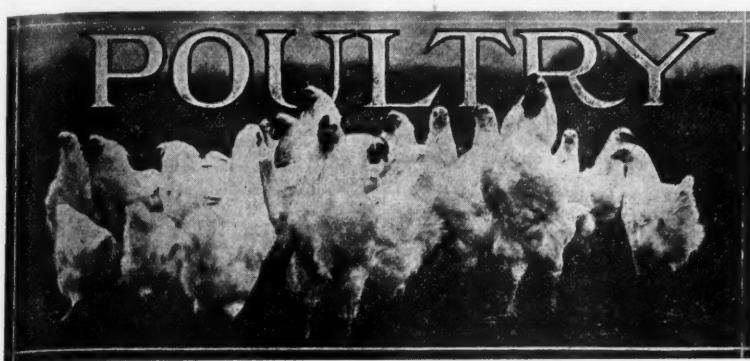
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### The \$700,000,000 Hen.

By C. A. Green.

There are few who are ready to believe that the entire value of the product of poultry in the United States amounts to nearly \$700,000,000, but such appears to be the case. This great sum of money produced by the hen is about the same as that of the total value of the wheat crop of the United States, which the capitalists of the country, the railroad and other transportation companies and the magnates of banks on Wall Street and all over the country, watch with such great interest, and with such alarm in case the crop should show a falling off, knowing that a decline in the product would surely affect business adversely.

Truly the hen is an important factor in the world over. She is a modest bird, attending quietly and orderly to her pursuits, laying numerous eggs and raising large families of little chicks. She often receives but slight attention and sometimes no attention whatever. She is preyed upon by insects and diseases which might be prevented, and is often compelled during the winter months to roost in the branches of trees, but still the hen survives and fills the earth with good cheer and riches. Long live the hen!

And now let us ask where did the hen come from? The answer is that she came from the jungles, the wild places of earth, where for countless thousands of years she existed in the wild state, and where the voice of the cockerel was heard at early morn, rising out of the shrubbery in which it was concealed, and high up over the tallest trees, bringing music to the ear of the wild man of that remote age. The hen can be traced far back in history. In the ruins of Pompeii, the city which was destroyed during an eruption of Vesuvius in the year 79, has been found mosaic flooring in which is a picture in stone of a Brown Leghorn hen made probably three thousand years ago, but that was not the beginning of the Brown Leghorn.

Some of our poultry originated in China. Among these were the Shanghai breed, which possibly dates back farther than the origin of the Brown Leghorn. China is a great country for poultry. Indeed it would be surprising if those people in China who are in such great need of nourishment should overlook the possibilities of the hen.

How can it be possible that the product of the hen should equal in value the product of the wheat fields of the United States? The answer is: For the reason that not every citizen of the country grows wheat, but the larger part of our citizens keep hens. Where there is one wheat grower there may be a thousand poultry keepers. Think how easy it is to start a poultry farm. A friend of mine, being charmed with the beauty of the White Leghorn, sent away for a setting of eggs, for which he paid two dollars. Almost every egg hatched and the chickens nested under my rose bushes and grape vines all summer, much to my interest and amusement. Now this brood are alive and productive and the owner has the privilege of increasing the number as large as he may elect.

Another friend sent for a setting of Black Monarchs. He had good success in hatching and now his place is made attractive by these beautiful birds, which move about with grace and dignity, gathering their daily supply of insects from the lawn and hedge row.

### The Poultry House.

Written for Green's Fruit Grower

By Frank I. Hanson.

When a hen is very sick a good sharp axe and careful aim is the best remedy. Put her out of her suffering before she contaminates the rest of the flock.

Make the shipping coop high enough to permit the fowls to stand erect and not be crowded. Treat them humanely.

When dressing poultry take care to save the feathers. They are valuable for pillows. Throw out all tail and wing feathers.

The person who will carry fowls for half a mile or less with their heads hanging down ought to receive a public lashing. It is the height of cruelty, and the

next man you see doing it just give him a lecture.

Any kind of poultry can be made to pay, with proper care and feed. But for the best results get pure blooded stock. It counts when you want to sell eggs for hatching.

Mix your own chicken feed. Many brands on the market contain grit and other useless ingredients, and are expensive.

The hen is the most hardy fowl to be found on the farm, and therefore she ought to appeal to anyone as a profitable investment.

Give the burlap curtains in front of the roosts a frequent scalding with boiling water and dry thoroughly in the sun. It means death to the vermin.

It is all right to charge good prices—if you deliver good goods. Strictly fresh eggs always speak for themselves, and it is poor business policy to take chances by slipping in doubtful ones.

It is surprising to think that a conscientious man will permit that real abomination—vermin—to inhabit his poultry houses. Get rid of them.

The secret of profit in poultry is to plan for a steady income, fresh eggs, market fowls, eggs for hatching, or breeding fowls. It is not always the large sales that amounts to the most in the long run.

### Poultry Notes.

For Green's Fruit Grower.

Sweet milks thickened with equal parts of wheat bran and middlings is the best egg food known. It should be fed once a day. Poor beans put into a kettle with a piece of fat meat and boiled till soft, makes a good food for laying hens. It may be fed clear or mixed with the morning mash. Oats fried in lard or other fat are good to start hens laying and keep them at it. Whole corn is the poorest food for laying hens. Cracked corn scattered in deep litter is far better. Wheat bran four parts, corn meal one part, bone and meat meal one-half part, mixed and fed dry three times a week is good for laying hens. Grape baskets tacked to the sides of the pens about ten inches from the floor make excellent food troughs. Lard pails, holding from two to four quarts, make good drinking vessels for the hens. Drive a large nail slanting into the side of the pen and hang the pail on it.

By M. L. Piper.

### Russia Has International Hen Show.

Russia and Japan, late deadly enemies, joined to-day in Moscow, Russia, in paying tribute to the "helpful hen" at the inaugural of the International Poultry Exhibition, the first big show of its kind to be held anywhere in Europe. The poultry industry of nearly all European nations, as well as Siberia, China, India and Japan is represented. The governments of Russia, Japan, China and Germany were officially represented in the opening ceremonies to-day.

Russia leads Europe in the poultry industry, the exports of eggs alone from this country last year amounting to \$32,799,835, the number of eggs sent out from the empire totaling nearly 3,000,000,000. Great Britain was the largest purchaser of Russian eggs, taking during the year \$13,000,000 worth. Germany, Austria-Hungary and Denmark also consume large quantities of Russian eggs. It is declared that the eggs produced in the Czars dominions this year will have a total value of well over \$100,000,000.

Ireland is well represented in the exhibition and statistics show that the Emerald Isle now exports annually about \$5,000,000 worth of poultry and \$14,000,000 worth of eggs.

Japan, according to statistics compiled for the exhibition by the representative of that country, has about 25,000,000 domestic fowls, valued at about a quarter as many dollars. About 30,000 dozen eggs are laid every year in Japan but these are insufficient to supply the home demand. Last year Japan imported eggs from China valued at about \$800,000.

The main object of the exhibition is to induce the farmers of Russia, especially in sections where the soil is poor or worked out, to take up poultry raising.

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Saves  
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—and learn everything about this time, labor and money-saving incubator—The X-Ray! It is the most wonderful artificial hatching machine in the world. Just takes one gallon of oil to hatch—one filling of the lamp. The lamp is new invention. Old style hatched 3 to 5 gallons of oil to hatch one lamp. It can be filled every day.

The X-Ray Incubator is built on an entirely new and different principle from the old style, wasteful machines. It has lamp underneath, square in the center where it ought to be—and soft on the side where no perfect temperature could possibly be maintained. With lamp underneath X-Ray's egg-chamber is always at even heat—always at a perfect hatching temperature. X-Ray's lid has two double-glass panes—thermometer can be seen every minute without raising top and chilling eggs.

### X-RAY INCUBATOR

"Built Different From All Other Machines" has only proven perfect heat regulator. Our automatic trip—an exclusive patented feature cuts down flame of burner when egg-chamber gets too hot—thus saving lots of oil and money! No excess heat escapes—every bit is used to good advantage! To use the X-Ray means less egg-handling, less oil, less heat generated, absolutely no waste, no filling of lamp during hatch, no fumes, no danger of "cooking" eggs—always even heat over egg-chamber. You don't have to take the eggs out of the X-Ray. The X-Ray Incubator is

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Fruit Growers everywhere are in the Poultry Business for Business and not only because fowls eat the bugs. Both lines pay well and fit each other.

## Eggs and Fruit are Great Twin Crops

EVERY man or woman who raises fruit ought to raise chickens.

The two industries belong together. The spare time from one fits nicely into the other.

Whether or not you own an incubator—if you are thinking seriously upon the poultry subject please write today for

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This is the most complete, interesting and helpful Year Book we have ever gotten out. 244 pages, 7 1/2 x 10 inches—profusely illustrated. And its full to running over with sound, practical information and suggestions. For example, it contains eight chapters of information never before published of immense value. The chapters are:

I—How to get twice as many eggs from the same number of hens. II—The 200-egg per year hen—how to produce her. III—Large sized eggs in demand as well as lots of them. IV—Mating and feeding of fowls to get fertile eggs. V—Selection and care of eggs for successful hatching. VI—Proper care of fowls and chicks with least amount of work. VII—How to brood chicks properly at the lowest cost. VIII—Premium-priced table poultry and how to produce it.

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and gives the convincing reasons why they are the choice of more fanciers of national reputation—more of the world's leading poultry plants, more Government Experiment Stations and more State Agricultural Colleges than all other makes combined. And it also tells the full facts about

### Cyphers Company's Service

which places in the hands of our customers the best poultry facts and poultry advice we can possibly turn out in personal letters, in bulletins,

booklets, etc. Working with the customer for his or her success after a machine has been bought has been a cardinal principle of Cyphers Company's Service. The new department is a further development along this line.

Cyphers Company's Service is founded on the results of fifteen years of hard work, close study and heavy cash investment—on the experience of tens of thousands of customers, on the daily knowledge we gain at the Cyphers Company's \$50,000.00 Experiment and Demonstration Poultry Farm—and on the reports of contests held to discover the most practical experiences in poultry raising.

We are now inaugurating a contest for \$1,000.00 in cash prizes open to every one, whether a Cyphers owner or not, for the best reports of actual money-making experiences. This 1912 contest is fully described in our big free book.

Be sure to write for the book now—today. You will find it interesting, helpful—a sure road to greater poultry profits.

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THERE are 325,000 people now using them successfully—making big money with them raising poultry every season. Every one of these successes is *proof* to you that the *Old Trusty* is the machine you ought to buy. No other machine has had such a tremendous sale—no other machine is giving such satisfaction—no other machine of same quality sells for such a low price.

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Read the proof in the description: Triple-cased throughout—inner case of high-grade  $\frac{1}{2}$ -inch powder-coated steel; middle case of highest grade asbestos—fireproof insulation; outer case of all, of galvanized metal, handsome mottled finish—equipped with guaranteed-not-to-leak cold-rolled copper tank and heater—indestructible—can't burn, can't warp, swell or open at the seams—crack or decay—cannot burn your house down if you may shipper complete with heat thermometer, egg-tester trays, and instructions—ready to run with sure results by anybody—no trouble, worry, or experimenting. Safety lamp and regulator fitted on at side—top clear for use as table in egg-testing.

Be sure to send for the big, free book—it shows over 500 photographs of machines in actual operation, and pictures of successful poultry hatcheries—also photographs of some of the people who are making successes with my machines. The book is written by Johnson *Himself*, who has the experience of the largest incubator factory in the world he has ever known. With the book Johnson will tell you for how much less than \$10.00 he will sell you an *Old Trusty*. Address:

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For Coughs and Colds put one on chest and another between shoulder blades. It breaks up the congestion (the cause of colds) before it can reach the lungs.

Constipation, Biliary, Indigestion, etc. **Brandreth's Pills** Entirely Vegetable.

### ADVANTAGE LIES WITH INCUBATOR.

Produces Slightly Better Chicks Than Hen Does—College Expert Says So.

In the first part of his lecture at the Rochester, N. Y. Poultry Show, Professor Trask told of the conditions under which the chickens should be hatched and then gave a detailed account of the care they should receive. He compared incubator hatching with the natural way and said that after two years of careful experimenting at Cornell, the incubator method had been found slightly superior. The chickens hatched from the incubators, he said, were usually larger and stronger and their laying powers as a rule were found to be greater. However, the professor said, the superiority of the chickens hatched in incubators over those hatched naturally was not great enough to make much difference. The experiments simply proved that the hatching by the incubators was not inferior to the natural method, as many people believe, and that was what the experiments were designed for.

"When the incubators are used in hatching chickens," said Professor Trask, "there are details that the poultryman must keep continually in mind. Chickens newly hatched should never be allowed to become chilled. The incubator should be sufficiently heated so that the chicks after leaving their shells may be kept perfectly warm. When they are old enough to warrant changing them to a cooler temperature, the change should be gradual.

"By improperly feeding young chickens poultrymen often rob their birds of much profit. Before the chick leaves its shell it eats the yolk of its own egg and for several hours after the chicken has come to life, this yolk will furnish all the nutriment necessary and no feeding should be attempted by the poultrymen. If the young bird is fed before the yolk has been properly digested the digestive organs of the chicks are liable to be upset and the disarrangement will probably result in death after a few weeks.

"Grain given to chicks should always be clean. They should never be fed so much that they will leave part of it and then eat it a few hours later in its impure form.

"Watering chicks is also one of the important features in their breeding and in the attention paid to this detail will rest, partly, the making or breaking of a good paying proposition for the poultrymen. Receptacles out of which the birds drink should be kept clean. They should be placed in such a way that the young birds will be unable to walk in them. Once a week at least they should be cleaned thoroughly with a disinfectant.

"After the chickens are old and strong enough to warrant their leaving the incubator and brooding pens they should be given an opportunity to run at large for a time, and the best place for such exercise is on the ground. There is something about mother earth that does the chickens a world of good."

The Lazy and the Busy Hen.—A laying hen is nearly always a singing hen. She is continually on the alert, has a bright red comb, and a nervous, fussy manner. She is the first off the roost and the last to go to roost at night. She arrives at the feed trough early and stays long, and if she must rustle for her living she gets down to business and rustles like a good one. The sluggish, slow moving hen with a dainty appetite and a disposition to sit around and let others elbow her away from the good things is the hen that should find her way to the dinner pot, for she is not a prolific layer and is a fat one, if she is in good health. If she is in poor health she will be droopy, sad or dim-eyed, and her feathers will be more or less rumpled and lusterless. There is now and then a hen that never lays an egg from some physical deformity or defect. These never have the same appearance as the steady layers. Often they are masculine in appearance, but perfectly healthy.

Thin vs. Fat Hens.—If I was going out to buy a lot of laying stock, and especially those that I expected to save eggs from for hatching, I should select the hens that were rather thin in preference to over fat stock. Once they have become too fat their service as winter layers is greatly lessened. Even after the food supply has been cut down they will not be inclined to start laying very soon. All this takes time, so the loss may be easily seen. It comes in two ways, first in giving the hens an unnecessary amount of food, in fact, throwing the food away; second, by having to keep the flock an unnecessary length of time to get them to laying.

A hen that is rather thin in flesh, yet in a good healthy condition, can soon be fed so she will be in prime egg producing condition. But the hen so filled up with

fat that she is sluggish, lazy and loafing around all day, is not so easily got down into laying shape. If poultry keepers would take more pains to learn if their hens are in the right flesh for laying, then exercise some care in feeding so as to keep them in that condition, they would get many dozens of eggs where now they get only a few during all the fall and winter.

Dust Baths.—Fowls need some kind of dust to roll in, as that is nature's way of freeing them from mites. Road dust is the best of all, and the fowls seem to like it best. At this season of the year it requires only a little time to wheel in a few barrels and dump it in some dry place for winter's use. Then arrange a frame about six inches deep and three feet square and keep it filled with the dust. Arrange the frame in a sunny place, as the fowls seem to like a bright spot when dusting. If a bath of this kind is provided, one need never fear mites of any kind. Coal ashes are also good. Wood ashes should never be used, as the lime often irritates the skin, but fowls enjoy picking over them for stray bits of charcoal. A little work now will save lots of worry later on.

### Booming Apples.

Albany Knickerbocker Press.

The city of Rochester, in the midst of one of the greatest apple-growing districts in the world, has just concluded an exhibition of the fruit. The western part of the Empire State this year produced an enormous crop of apples and received good prices for them; but it has been borne in upon the intelligence of the New York apple men that they will have to do something more than sit still until their apples ripen and then sell them if they are to hold their own against the Pacific Northwest. The apple district there has invaded the Eastern markets with smooth-skinned, luscious-looking fruit, carefully packed and extensively advertised. The Eastern growers have found out that they must have more regard for appearances instead of trusting wholly to the undoubted excellence of their product. Hence the Rochester apple show.

### Cost of Growing Apples.

A very good piece of work being carried on by the Division of Farm Management of the United States Department of Agriculture is that of ascertaining by actual record the cost of production of the various orchard and farm products, says The American Cultivator.

M. C. Burritt has made a careful record of the items constituting the cost of managing an orchard of six acres containing 234 trees. He finds that the spray material has cost him \$2.28 per acre per year; the barrels have cost him \$21.76; labor has amounted to \$37.91; equipment has cost \$4.58, and the interest on the land investment amounts to \$5.67. The total cost per acre is \$73.33.

Taking these figures as a basis, Mr. Burritt believes that he could deliver a barrel of apples at his station at \$1 to \$1.25 under average crop conditions, and in doing this he would receive about 5 per cent. on the capital invested besides fair wages for his labor. In addition to the apples which could be marketed in barrels, he would have culls and windfalls representing clear profit. These have amounted to 29 cents per barrel during the last nine years. He believes that he could grow and sell a barrel of apples for 90 cents and pay all expenses connected with the production. Of course a 5 per cent. rate of interest would not take care of the speculative risk which is inevitably associated with crop production, and, therefore, the profit should be very much larger than this figure.

I have taken notice all my life that apples would keep better and taste better when packed in clean, dry leaves than any other way. Whether in barrels, boxes or lying on the ground. I don't like to bury apples in the earth. They take on the taste of the dirt. The natural keeping place of wild crab apples in the northern states in my boyhood days was on the ground covered with leaves, I used to dig them out and eat them. They were yellow and mellow. E. W. GEER.

Farmington, Mo.

### In Sections.

"Have you eaten any of your pieces of chocolate, Freddy?"

"Yes, auntie, I ate half a piece."

"And what did you do with the other half?"

"I ate that too."—Everybody's Weekly.

"I've got a place among the tip-topers for sure this time. They're bang-up aristocrats I live with now."

"What do you mean by bang-up aristocrats?" a friend asked.

"Oh," she replied, "I mean places where they have three kinds of wine and the ladies smoke the men swear."

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YOU don't need experience. My 35 years' experience and STAHL'S EXCELSIOR is the most effective and most economical incubator you can buy at any price, assure your success. Hundreds of men and women are making \$1,000 to \$5,000 per year extra with STAHL'S EXCELSIOR. You can do it. STAHL'S EXCELSIOR hatches the largest possible percentage of eggs and is most economical to operate.

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Book is full of valuable information. Tells how to hatch healthy chicks. Instructive, interesting.

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The Story of 25 Years with Poultry and Farmers and Fanciers will help many Farmers get more eggs and save more money; tells many things few folks know making money with hens. Find out about America's Largest Line of Incubators and Breeders, and get six poultry chapters written by Robert Essex himself—it's all in our Free Catalog—Write today. Address Robert Essex Incubator Co., 47 Henry St., Buffalo, N. Y.

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It took me 25 years to make such an offer as this. Will you write him at once and tell him you want to send six surprises. He will tell you my factory here you'd think my machines were like the cheap kind.

Miller's Ideas

stand up against highest priced hatcheries and make biggest poultry profits for owners. Write me. My book is better than ever. My offer will please you. My machine, my experience and help will insure your success.

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My Price Will Save You Money

Build Your Own Incubator

I Show You How

them. My lamp maintains constant oil level. My thermostat, damper and flame regulation save time, money and sleepless nights. Also automatic regulation of heat, moisture and humidity. Use these parts on your old incubator, too.

Write now for my Free Book telling all about home-built incubators.

H. M. SHEER, Dept. 20, QUINCY, Ill.

MAKE HENS LAY when Eggs are hatched. You can do it now. Send for full details and testimonials in our 32 page Illustrated Book, with a systematic Record & Expense acc't, showing gain or loss monthly for 1 year. 10c. G. S. VIBERET, Chatsworth, Conn.

## Stop! Just a Minute, Please

This little ad tells you how to get the big incubator bargain.

Write me a postal for "Hatching Facts" and ample proof of superiority of my famous

## World's Champion BELLE CITY 140-Egg Incubator

Has double walls and door and is built with all copper tank, hot water heat, self-regulator, "Tyco" thermometer, egg tester, safety 1, 2, 3, or 8 lamp, nursery, high legs.

I am going to sell all my machines for 1, 2, or 3 months' money back.

100-Chick double-walled hot water top heated Brooder (price \$4.85) for \$11.50 and pay freight. Send for "Hatching Facts" today.

Don't you want to be one of the lucky testers? If so, write today. I will surprise you with the proofs of the wonderful hatching of the most perfect eggs ever made. Why pay more for a machine that can't compete with mine in the championship class? My machine makes you money, from the start at small outlay. Write me for "Hatching Facts" today. I will surprise you with the facts of the same guarantee. Money back if not satisfied.

Thousands have bought this way.

Address, JIM ROHAN, Pres.

Belle City Incubator Company

Box 103 Racine, Wis.

Price \$7.55 Freight Paid

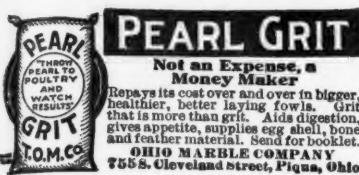
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We ship quick from St. Paul, Buffalo, Kansas City or Racine.

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50 Best Paying Varieties Pure-Bred Chickens, Ducks, Geese, Turkeys, Eggs, Dogs and Incubators. All at Low Prices. Send 4c. for my Book which gives reliable information worth many dollars to you. W. A. WEBER, Box 969 Mankato, Minn.

130 EGG Mankato Incubator \$7.25  
This high-grade hatcher, constructed from the ground up, no middle profits, under binding guarantee and long-term trial. Has three thicknesses of heavy galvanized iron, metal legs, copper hot-water tank, self-regulating alarm bell, thermometer. Safest made. So simple a child can operate. Non-petroleum oil. Send for my book. Big catalog free. Broders, \$2.50 up. Mankato Incubator Company, Box 906, Mankato, Minn.

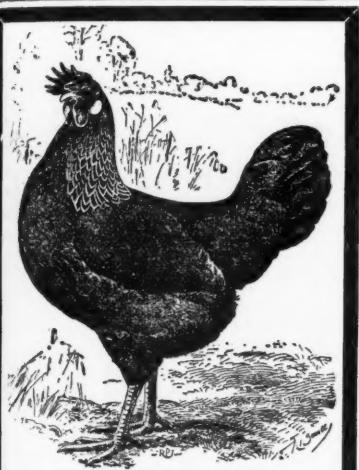
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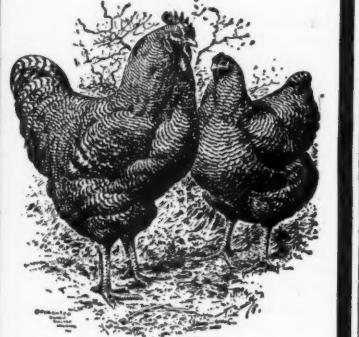
## 1912 ART CALENDAR FREE

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The Popular Leghorn.—The acknowledged queen of the practical egg-laying breeds is the Leghorn, when judged by the standard of the greatest number of marketable eggs produced at least cost. Not only are the hens persistent layers, but they are extremely active foragers and waste no time in setting. Like a good milch cow they put little fat upon their bones, but devote all surplus nourishment to steady production. They eat less than the heavy breeds, but whatever they consume is put to good purpose. Price of S. C. Brown Leghorns and B. P. Rocks, all one price.



## BARRED PLYMOUTH ROCKS

This breed is as solid as its name and is often called the "Farmer's Friend," the "All Round Fowl," the "Old Reliable." It is the bird for business, and deemed by many the best fowl for farm and home raising. It is not only a good layer, but is quick to develop for the early market. As a far-sighted farmer once said to us, "When you kill one you've got something."

PRICE OF BIRDS OF ALL BREEDS:  
Cocherels, \$2.50, \$3.00 and \$3.50 each; Pullets, \$2.00, \$2.50 and \$3.00 each; Trios \$8.00, \$9.00 and \$10.00. We ship no call birds. The lowest priced birds offered are standard bred, practically as good for breeding purposes as the higher priced birds. The \$5 birds offered are the pick from the flock containing the largest percentage of standard points and therefore commanding a higher price since it makes them eligible for show purposes.

PRICE OF EGGS FOR HATCHING FOR ALL BREEDS:  
From good breeding pens, \$1.00 per 13; from our best breeding pens, \$2.00 per 13. While we do not guarantee the fertility of our eggs we are willing to replace all settings from which the purchasers receive less than six chicks, at half the price paid.

GREEN'S NURSERY COMPANY,  
ROCHESTER, N.Y.

## SUCCESS WITH POULTRY. Not To Be Looked For by the Man or Woman Who is Afraid of Continuous Work.

A man was discussing with a friend, a veteran poultry keeper, the chances of success in poultry raising. Says Mrs. James F. Hudson, Penn, in Tribune Farmer. The old poultry man, with years of experience back of him, gave this advice: "If you are inclined to be tired, don't go into the poultry business." For any one contemplating a venture into the business this advice is worth considering. For no matter how young, strong, clever or enthusiastic a man may be, if there is anything about him of the hookworm nature, poultry keeping is the last business in the world for him to engage in. I have in mind now a man who is none of these things, but just a rather feeble man, living, as he terms it, on borrowed time, having passed the allotted limit of threescore years and ten. This man having met with an accident which deprived him of the partial use of one arm, was restless on account of enforced idleness. He became interested in poultry, sent for catalogues, read poultry journals and looked into the subject thoroughly. Recently I visited his small poultry yard, and it was with the greatest pride that his daughter showed me his choice collection of fowls. She called my attention to the small but modern poultry houses built by her aged father, and with only one good hand to use. When there's a will there's surely a way, if perseverance is included.



### Winter in the City.

This is the season when the skater is skimming over the glary ice of river, lake, brook or pond. But few of our readers will ride to the place for skating in an automobile, as do the boy and girl in the above illustration, but our readers will have just as good time skating as though they did ride in automobiles. Do not get the idea that rich people are the happiest for they are not. Riches bring responsibilities, anxieties and trouble, and in many instances shorten life and lessen happiness. I was never happier than when as a boy I skated upon the glary ice of Honeoye creek or adjacent streams and ponds near the old homestead, twelve miles south of Rochester, N. Y. Nothing will give one such a voracious appetite or such zest for living as skating on a brisk winter's day. While I am no longer a youth and cannot engage in all the youthful games and pastimes, I am a believer in them and enjoy seeing young people having a good time.

### THE FILLER SYSTEM. Its Use in the Apple Orchard Will Ultimately Prove A Menace.

Written for Green's Fruit Grower

By C. F. Bley.

The almost universal present practice of using fillers in commercial apple planting, will, the writer firmly believes, eventually prove disastrous.

His opinion is based on the overcrowded condition of most of our mature apple orchards to-day, establishing the lack of courage, or prudence, or both, of present growers to sacrifice a portion of these trees to make the room clearly needed by the remainder.

There is not on record a single instance of the removal in time of fillers used—in cases where peaches or other fruits than apples were used.

Will the present owner, in the future, or those who succeed him be any less reluctant to remove young, thrifty, valuable trees? How many shall be able to muster the necessary "nerve?"

Many of our mature orchards to-day—among them some of the best kept ones—are suffering from over-crowding, shutting out sunlight and air, and causing the

branches to interlace—those of one tree with those of another, and also having a tendency to drive the branches upward unduly.

These orchards were planted, mainly 33 feet apart and suffered greatly for want of more room in which the trees could spread and attain their normal growth and form.

Under the title "Things That Trouble the Fruit Growers," in October issue of Green's Fruit Grower, Prof. Van Deman says: "Scattered all over the country are thousands of orchards that have been planted too closely." But, had these same orchards been planted with fillers, would—well, would there be any apple orchards to-day?

Theoretically the filler system is inviting, and, to nurserymen is very practical; but to the fruit grower—the of the future—it will be a source of loss and of perplexity.

As Prof. Van Deman says in the same article in reference to the time or stage at which fillers are to be removed. "The proper time comes long before the branches interfere."

So then assuming that trees have been set at 50 feet—the distance that some authorities including Prof. Van Deman, set and recommend for the standard or permanent trees, if they are then filled both ways making the distance 25 by 25 feet for each tree—how long, approximately, can the fillers remain without harm? The Professor says "there should always be room for sun and air, and for a team to pass between the branches." He would probably insist upon a space of five feet, leaving ten feet of space on each side of trunk. On fertile soil a vigorous apple tree should attain a spread of twenty feet in fifteen years from date of planting; the earliest maturing varieties will not come into commercial bearing under five years, so that on the above basis the fillers could be of service only ten years. Is it worth while to take the chance of permanently injuring a commercial orchard that ought to live and bear fruit a hundred years on the assumption that the fruit growers will then have the courage—he has not displayed it so far—to cut out seventy-five per cent of his bearing apple trees? It's a pretty safe rule to judge the future by the past, and when that is done the filler system in apple orchards will be discontinued as it should be.

The writer believes that the filler system was introduced and encouraged primarily, and is being perpetuated by the nurserymen—it takes four times as much nursery stock to plant a given block with fillers as it does to plant permanent trees alone.

The philosophy of the filler system rests upon the theory that, once a fruit grower has made up his mind—he may have been pondering it a long time—to plant a given field to apples he must proceed to make it all apples, that is, to have the entire area devoted to fruit instead of intercropping the available land until such time as the land should all be given over to the trees.

But even with fillers, for some years there will still be some open ground, then by the same logic he should, instead of having 17 trees to the acre without fillers, or 69 with fillers, interplant once more and make them 124 feet apart, or 276 trees to the acre, and carried to its logical conclusion he should check row his field with a corn maker and plant the apple seeds at the intersection!

The only consolation the writer can see in the present filler system, is, that it is not as popular as it was a few years ago.

He is conscious too of the fact that anything he can say will not break up a pack ice that he believes will surely result disastrously in its ultimate outcome, but he has published his earnest convictions and registered his protest.

What Tree Bears Fruit Quickest?—Mr. J. E. Palmer of Pa. asks Green's Fruit Grower what tree he can plant in his garden will bear fruit quickest, and asks what he shall do with a garden that is inclined to be wet. He is seventy years old, has room for just one tree and wants to know what that tree shall be.

C. A. Green's Reply: There is no fruit which will bear fruit more quickly than a dwarf pear tree. The next fruit tree to bear early would be perhaps the hardy red cherry, which bears at an early age.

The wet ground should be tile drained. Put rows of tile in ten feet apart. This would be considered very close tiling for a field, but it is very important that a vegetable garden should be well drained so that early seeds will start there and make quick and abundant growth.

### Autumn.

The nights are getting chilly,  
And the leaves are falling fast;  
And the wooded hills and valley  
Are a scarlet crimson mass.  
And the robins and the song-birds  
Are leaving us to go;  
For they know it's turning winter,  
When the ground is white with snow.

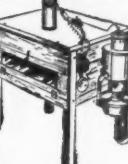
## Just Send Me One Dollar

And I will ship to any open R. R. Station in the U. S. or of Canada, this Right Incubator. Any one can buy this Right Incubator in the world, but I will sell to you. After you examine my Incubator—if you are satisfied, pay \$7.50 and freight and you become owner of this Best Incubator in the World.

It is the Hot Water System Copper Tank, Double Walled, Packed with Mineral Wool, Triple Top—Double Bottom, Double Glass Door, Self-Regulating and my Original Electric Alarm Bell. The greatest feature is the Incubator.

Write for catalog of my full line of Incubators and Brooders.

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Latest Book "Profitable Poultry," finest published, 120 pages of practical facts, 160 beautiful half-tones. Tells how to breed, hatch, feed and market to great money. Tell all about the new 1912 book, 45 pure-bred varieties. Beautiful, hardy and money makers. We start you right. Lowest prices on fowls, eggs, incubators, etc., sent for 5c. Berry's Poultry Farm, Box 96, Clarinda, Iowa.

Poultry 47 leading varieties Pure Fred Chickens, Ducks, Geese, Turkeys; also Holstein Cattle—prize winners. Oldest poultry farm in northwest. Stock, eggs and incubators at low prices. Send 4 cents for catalogue.

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GREIDER'S FINE POULTRY Book and calendar for 1912 contains 200 pages, 72 varieties pure bred, 62 colored plates. Many other illustrations, descriptions, broilers and pullets. Lowest prices on all stock eggs. How to raise and make hens lay. Get my plan. They all say it's great—this book—only 15 cents.

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**A BIRD OF A ROOSTER.**  
Owner Refused \$2,000 For Him at Madison Square Garden Show.

Some idea of the value of a well bred bird is derived from the fact that after exhibiting the champion Barred Plymouth Rock male at the Madison Square Garden show Mr. Bright, the owner, refused an offer of \$2,000 for him. Questioned as to the truth of this report by the Country Gentleman, Mr. Bright said: "I was offered that sum sure enough and was rather startled myself—so much so that I was tempted to ask the one who made it with what kind of money he intended to pay me. I knew that it had taken me thirty years to produce this bird and that if I wished to continue to improve my stock I could not afford to part with him, so I refused the offer.

"I may have been foolish and I may not. At any rate, in eighteen months we sold \$3,000 worth of birds and eggs produced by the yard of which this male was the head." Nine males, of which this one was the sire, sold for \$100 each, and the eggs sold for \$25 for thirteen.

**Will it Pay to Grow Crab Apples?**

By Chas. A. Frazer.

Editor of Green's Fruit Grower.—You often hear this question asked. Perhaps the largest crab apple orchard in Ohio is located one mile north of the late President McKinley's memorial monument

period previously to setting the orchard. At depths of three to four feet it is not unusual to find stratified gravel and sand through which all excess water passes readily, thus giving ample drainage which is of greatest importance. Drainage is aided further by elevation, being 1,100 feet above sea level and the slope being to the East and South which prevents late frosts. Hence the water never stands on the surface, neither can the subsoil become water logged. Iron is necessary in order to give a high color to fruit and the bright red of the apples is aided by the abundance of that mineral in the soil.

As will be seen, slope, porous subsoil, condition of the iron, also some gravel in the soil are all favorable aids to getting the right kind of orchard soil. Therefore it will be evident to all that wherever the climate favors fruit growing, the soil is undeniably the controlling factor.

This soil is derived from the mingling of a large variety of minerals and rocks, as they were left here by the glacial ice sheet ages ago, and there are thousands of acres equally well situated in Ohio.

**What The Pullet Does.**

The pullet ought to begin to lay at five or six months old. In one year she will lay from 120 to 150 eggs if she is well fed and has the right care and proper food. This will make ten to twelve dozen a year. The ten or twelve dozen will bring



Scenes on the Fraser Fruit Farm, Ohio. Photograph by Charles R. Fraser, taken in his ten acre crab apple orchard. The fruit shown is the Hyslop crab grown primarily for jelly. These crab apples netted the grower seventy-four cents a bushel. The cider made from the Hewe's Virginia crab this season amounted to one hundred barrels and sold for twenty-five cents a gallon. Mr. Fraser commenced spraying nine years ago and thus secures perfect fruit.

at Canton. There are nearly one thousand trees in the orchard and the owner Charles R. Frazer finds it very profitable. The past season about two thousand bushels were gathered. The crab apple is very prolific and if the trees are sprayed and carefully taken care of, produce abundance of fruit every year. In this orchard are the following eight varieties: Darmouth, Transcendent, Red Siberian, General Grant, Lady Crab, Whitney No. 20, Hyslop and Hewe's Virginia.

The first five mentioned are used principally for jelly and preserving, and the Whitney No. 20 has no equal for canning and spicing. As much care is taken on this farm in picking and marketing these apples as with the peaches, they are sent to the market in new half-bushel baskets, covered with red netting and each basket contains a tag, giving the name of the variety, its qualifications and that it came from "The Frazer Fruit Farm", Canton, O. If the fruit growers would take more pains in grading and getting their product to the market in attractive shape, better prices would be secured. Several hundred baskets were shipped to Cleveland last season, netting the producer one dollar a bushel.

The cider making is a big item on this farm, the past season ninety barrels were made from the Hyslop and Hewe's Virginia varieties. It makes a beverage resembling the champagne-wine and was sold direct from the press to the hotels and cafes at twenty-five cents a gallon, so that the cider brought in a return of nearly \$1,000.

The mulch method of culture is practiced in this orchard. The soil averaging eight inches deep is a heavy brown silt loam, the subsoil is heavier but is a light brown, it has never been robbed of humus and is in a good state having been used exclusively for pasture for a long

from 18 to 25 cents and perhaps more a dozen. This will bring from \$2 to \$3 for the work of one hen in one year. Bringing her up from chickenhood to the hen of one year old costs from \$1 to \$1.25. That will leave more than \$1 profit for the work and care of each. It pays better to sell the old hens in the fall and keep pullets than to winter them, for it will take them about one hundred days to shed their feathers and get ready to lay, and then they may not lay; but all this time they will still be eating.

**Whole Corn for Fowls.**

The poultry press is almost unanimous in advising the very limited use of whole corn as a poultry food. They claim that corn puts on fat and that an overfat condition is detrimental to the function of egg making. Granting that this is true, it must be equally true that cornmeal will bring about a like condition. Yet every formula for a mash, wet or dry, contains cornmeal as an important constituent. I therefore believe that, where whole corn is fed in any considerable amount, the cornmeal should be omitted from the mash. Cornmeal usually sells at an advance of from 30 to 50 per cent. over the price of whole corn, and by leaving it out of the mash and increasing the amount of whole corn in proportion, quite a saving can be affected without changing the character of the feed at all. Corn is the cheapest food available, and when balanced with feeds rich in protein can often be substituted for higher priced grains.—T. Z. Richey, Cannelton, Ind. Tribune.

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**Experience of A Slave.**  
Mr. E. E. Hale relates for Green's Fruit Grower the following truthful incident: A negro slave in the south was converted at a camp meeting. Following his conversion he prayed loud and fervently. His master complained that he made too much noise at his prayer and asked him to desist. He tried to pray with less fervor but did not succeed, therefore his master told him if he did not quit making so much noise he would sell him. Again the slave made an effort to pray silently but did not succeed, therefore his owner took him to New Orleans announcing that he would be sold.

In the commission house district was a certain man who would buy anything if he could get it cheap. He saw this negro slave and asked the price. When told the price was one thousand dollars he said he would take the slave, therefore he bought him and removed him to his store and set him at work.

A few weeks later the former owner of the slave came to the store of the man who had purchased the slave and said that he would like to buy the negro back again. During the slave's absence he had discovered that he had not appreciated the man's true worth and reliability. He offered the purchaser of the slave much more money than he had paid for him, but the commission man refused to sell, saying "I want to keep this man to pray for me." The probabilities are that he needed praying for.

A woman can forgive a husband many things if he carves without getting a spot on the table cloth.

Too many eye-openers are good for the optician.

## Farm Department

### Accidents On the Farm.

Written for Green's Fruit Grower  
By Frank I. Hanson.

Accidents which require immediate attention may occur, and professional aid cannot always be obtained quickly. Particularly is this true where the farm is several miles from the nearest village and where there is no telephone accommodations. Therefore, the importance of exercising the most rigid care at all times is apparent. The greater majority of accidents and calamities being the direct result of ignorance and carelessness a few words of caution may not prove invaluable.

It may seem unnecessary to caution farmers in regard to handling horses and cattle, but how many are injured through sheer thoughtlessness. When leading an animal never tie the halter around the waist or wrist. Keep it in the hands where it can be released instantly, if the animal becomes frightened and uncontrollable. Take no chances with the kickers. A horse that is an habitual kicker has no place on the farm, especially for women to handle. Neither has one that is afraid of every shadow. Never pass behind a horse or enter the stall without speaking to the animal or in some way attracting its attention. Remember that self preservation is the first law of nature, and any horse could be well excused for inflicting injury if frightened under such circumstances. When releasing cattle from their stanchions make it a point to stand on the side farthest from the door. They are usually anxious to get out doors, and may do unintentional harm with their horns.

Automobiles are the cause of many accidents, because so many horses are frightened of them. Try to avoid traveling over narrow roads as much as possible. Bring the horse to a stop till you see what the chauffeur is going to do. If he is a gentleman he will be as considerate as possible and give you plenty of road. In turn you should give him as much road as he needs, anyway to get safely out of the difficulty. In most cases it is exceedingly poor judgment to use the whip on a frightened horse.

There cannot be too much caution where there is a ferocious bull. They should be confined all the time, strangers ought to take no chances by managing them. The writer has known of people placing them in an orchard to frighten away petty thieves. Such a proceeding is dangerous in the extreme and ought not to be allowed. Every bull should wear a good ring in his nose, and at no time be tantalized.

There are many places around most farms that are liable to cause accidents, and such places are seldom repaired till somebody receives a serious injury. Loose boards in the floor, especially if on the upper beams of the barn, are dangerous, and all such should be securely nailed in place. Ladders should be destroyed and new ones bought, rather than take chances with old ones. They should be equipped with strong spikes at the bottom and hooks at the top. Be sure that the rungs are not too far apart, not over twelve inches, for the boys to travel over with safety. Ladders that occupy an upright permanent position should be tied very securely with good strong cord.

Never pass in front of a mowing machine knife when the horses are attached. Such a proceeding is exceedingly dangerous, for the best of horses are subject to sudden fright. In one instance known to the writer a man stooped in front of the knife to make some repairs, when the animals ran away at high speed. He was caught by the leg and horribly mangled, leaving him maimed for life after a hard struggle for months in a hospital.

Scythes should be kept in a box made purposely for them. Never leave them laying on the floor and hanging them up is the height of carelessness.

When a man goes into the woods to use an axe he is gambling with misfortune, for the most expert woodsmen frequently meet with accident, and therefore it is not safe to go alone. If nothing better can be done get a boy to go with you, to go for help if necessary. Always have a piece of strong cord in your pocket to use on a severed vein or artery. Never go into the woods alone with a team, especially to handle heavy logs or perform other dangerous work. It does not pay to take such risks.

If everybody would exercise more care and good sense disastrous fires would be very rare. It can be well classed as a common enemy and our greatest comfort,

and therefore requires our constant vigilance. Keep matches away from mice and never let children play with them. Never leave oily rags or shavings laying around as they will themselves take fire. Ashes should not be kept in wooden receptacles till they are thoroughly cold. Put them into an old metal vessel and set them in the cellar for a few days, or better still turn them on the ground several rods distant from the buildings. Lanterns are too cheap to run any risk by using an old one. Have hooks for them in the barn when doing the chores. Make it a firm law to allow no smoking in the barns and stables. Inspect the chimneys often and keep the soot cleaned out of them. At all times be watchful.

### Why Not Devote Your Farm to Something Different?

By C. A. Green.

Men are all more or less imitative, therefore the tendency of all kinds of business is to run in ruts. The grocer who breaks away from the ordinary rut and equips his store with marvellous tact and ingenuity and with methods of cleanliness and protection, is the man who makes the largest profits.

There is no line of business in which imitation is carried so far as in farming in New York and other eastern states. What one farmer does you will be apt to find other farmers doing, therefore I ask why not break away from the ordinary methods of your neighbors and friends and undertake something new? If you are a poor man encumbered with debt you will have to begin your experiments on a very small scale, for the experiment may not turn out as profitable as you have supposed.

When I returned to the farm, after fifteen years' experience in a city bank, I had no intention of conducting a farm as my neighbors were conducting theirs. My idea was to start a fruit farm, growing nearly all the hearty small fruits and the hardy large fruits, which are something that no farmer in my neighborhood was thinking about. I certainly succeeded in making my farm far more profitable than any of the neighboring farms.

But there are many other things aside from fruit growing, poultry keeping or fancy cattle, which men who own productive or unproductive farms can turn their attention to with profit. This is getting to be a rich country, a country filled with wealthy men. Years ago a millionaire was a rarity, but now a man who is worth only a million is not considered very rich, therefore why not run your farm so as to meet the wants of some wealthy classes. For instance, there is the propagation of pheasants, which any farmer could undertake. Pheasants increase in a wild state in spite of all their enemies—guns, dogs, skunks, weasels, cats. This indicates that in enclosures they can be propagated about as easily as chickens. I have seen pheasant hatcheries on the estates of wealthy Englishmen in England, where thousands of these game birds were cared for about the same as we care for our poultry. Pheasants are in demand. Rich men want them for the purpose of stocking up their estates and pay fancy prices for them. The meat of pheasants is highly prized. Its flesh is said to be the finest of all game birds in quality.

The deer are easily tamed and easily bred. In Vermont and Connecticut, where wild deer are protected, they are so plentiful as to be a nuisance to the farmers, taking their fruit and sometimes coming into the barnyard with their cattle. Deer are sought for by rich men for various purposes. It would probably pay to grow deer for their flesh and hides.

Muskrat pelts are so high in price of late years it will pay well to confine muskrats and devote oneself largely to their increase. The same is true of many of the most valuable kinds of foxes. Quail and partridge could be bred on a corner of your farm possibly with profit. All of these enterprises will be connected with more or less risk, therefore those having but little money to risk should use the greatest care in not going far with their early experiments, beginning in a small way and learning as they go along.

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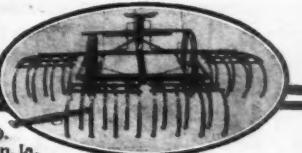
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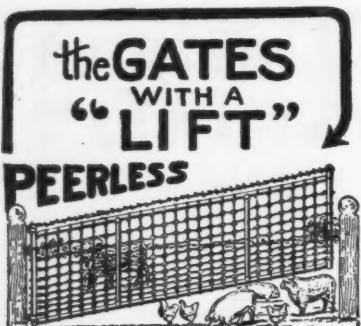
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## A Square Deals for the Animals.

Written for Green's Fruit Grower

By Frank I. Hanson.

According to the scriptures we have been given power to rule over all the beasts of the earth. Then we are responsible for their welfare, and there is no excuse if we neglect those around us. Give them a square deal.

There is not a creature, man or beast, that will not in some degree respond to kindness; therefore kindness must be one of the laws of nature, and our hearts just ought to be overflowing.

There is no better way to size up a man's religion than by the way he treats his stock. Any man who can sleep peacefully, with the knowledge that his animals are not properly housed and fed, must be indeed hard of heart.

Many have argued that it is wrong to take animal life. Perhaps it may be true, but it seems to be the lesser of evils to destroy any kind of pests. Perform the duty quickly and humanely. None are too bad to deserve a painless death.

Every farm ought to have a good stock of pets. Place them under the care of the children, who will learn a good many of life's necessary lessons—kindness, unselfishness, patience,—and at the same time be able to make a little spending money.

A handful of food thrown to a hungry dog or cat, even though they are only "tramps," is one of the surest ways to bring blessings upon your head. If we desire protection from the powers above us, we must be willing to aid the creatures that are below us.

A dog's tail should be up and wagging and if he carries it any other way he is not receiving the right kind of treatment. A good dog is one of the most faithful servants of mankind and he is worthy of your kindness.

Any man who will use the shovel or milking stool upon a cow, no matter whether she be a kicker or not, is little less than a human brute, and ought not to be tolerated on the farm. Cows are very timid, sensitive creatures and their bad habits are the result of poor training. Then why beat them?

Never be guilty of shooting or poisoning your neighbors dogs and cats. If they bother you have a heart to heart with him, and no doubt matters will be adjusted. Thus you will make no enemies. You must remember that his pets are dear to him.

If any man passes the portals of heaven by virtue of his kindness the late George T. Angell surely will. His great movement in making life more easy for the animals was a work of love. We cannot all be an Angell, but we can do something for the creatures that are under our immediate care.

The parting with an animal, particularly a faithful horse or a valued pet, is or ought to be a serious matter. The value received should be a small part of the consideration. Most important of all, make sure that the new owner is a kind master. It is really wicked to put an innocent animal into the hands of an indifferent person, where it will suffer from want of proper care.

To a lover of animal nature there can be nothing more touching than to have a favorite eat stroke her side against your feet, and invite you the best way she can to some place. You follow and she proudly exhibits a furry, wiggling little family. What is your duty in the matter? Put them out of the way at once. It is a shame to let kittens grow up and put them into any kind of a home to get rid of them.

## The Best Way To Cure Pork.

A day should be selected for killing when the temperature is low enough to insure a thorough cooling by the following morning, the hogs being dressed and hung over night.

On the morning of the day the hogs are killed, for each 400 pounds of meat make a brine as follows; 20 gallons of rain water; 30 pounds of salt; 8 ounces of baking soda; 10 pounds of brown sugar; 1 gallon of molasses (use good molasses, not the adulterated kind). This fluid should be boiled and skimmed in the morning and left to cool in a shady place.

When cool, add 5 ounces of saltpeter. Dissolve the saltpeter in warm water and stir thoroughly.

The following morning cut up the hogs as usual, and pack in barrels. Put the sides of the meat or middlings in the bottom and the shoulders next, and the hams on top of these, all with the skin side down. Weight the meat down well and pour the brine over until the meat is completely covered. Then cover the top of the barrel with some good thick covering that will prevent evaporation.

Look at the meat often enough to see that the brine has not evaporated so as to leave any meat exposed. If it should become exposed more brine should be added. The meat can be left in the brine indefinitely, but if it is desired to smoke the meat, it should be taken out in about six weeks.

If our Southern farmers will use this method and cure their own meat at home, they will save a neat sum each year.

If it has been your custom to put up the supply of family meat by curing with dry salt, and do not care to risk all of it by another method, then try a barrel or two, using the above plan and compare the results.—H. S. Mobley, Ark.

## Johnny Waker on His Dad.

Written for Green's Fruit Grower

by Uncle Dudley.

Mi dad's an ole hiperkrit, that's wot he is, sed Jonny tu his chum Harry. He belongs to the church an goze tu kommunity, an hez spels when he is teribul pious. Sunday mawnins he'll get the Sunday papur an look at the komik pikters, an reed the jokes, an laf like er boy. When ma asks him if he aint goin tu meetin yu orter se his chin drop, an hear him tel how bad he feels. Mi yu'd think he wuz goin tu di rite off if you kud hear him; but wunse in er while, ma'll keep at him an get him tu go. When he duz go tu meetin, an Sundy skule, he don't kno anythin 'bout the lezon. He kant tel wheter its bout the buis ov Bas-hun, or the Makabeian konquest. Tother day i wuz reedin an i kame tu the sentunc, "A fule an his muny is soon parted." Twaz in quotashun marks an i ast dad who sed it. He sed it wuz wun on Solumuns sayins, an i'd find it in the Bible. I ast him in what book, an he sed Genesis. Dad knowe how tu tel er slik story tu git out of er tite plase. Wun mawnin i wuz in the kichen, an dad wuz in the sitin room, when that jolly ole maid that liven nex dore kame in. Purty soon i herd her giglin, an sayin, Now you behave, Now you stop, but she kept rite on giglin. Just then ma kame in, an ast wots goin on here? An dad sez oh nothin, nothin unly i wuz tellin Jenny er funny story, an she wuz lafin at it. Tellin her er funny story, huh; he wuz bussin her, that's wot he wuz doin. I didnt se him, but I kno, kause everybody ses i'm er chip ov the ol blok. Dad is allus awful pius when the ministur kums, an wun afturnoon, he an his wife kalld on us, an staid tu tee. When we hed set down tu super i spozed we'd do as usual, an i wuz just rechin fur er donut, when dad sez, mi son wate er minit so I did, an he ast the minister tu ask er blessin. While he wuz doin it dad's nose almos teched his plate. After super dad went intu the parlur, an brot out the big Bible, an handed it tu the ministur an ast him tu reed an pray. He did an his wife an ma praed, but dad didnt. The nex mawnin i set down tu brekfus, an folded mi arms an set stil. Dad hed jus begun tu fil up when he lookd round an se mi setin thar. What's the matter, mi son, sez he. Why aint ye filin yure bred basket with pork an tatur? O, i sez i'm waitin fur er blessin tu be ast, an the food tu be past. O, sez he, thet wuz unly fur last nite. We aint goin tu hev eny more ov that now. What did you do it fur anyway, i ast. Maners, mi son, maners. We shud allus be mannerly, when the ministur komes. Wal, sez i mi techer sed the skule athonitiz ought tu get er good stout man tu tech us kids maners. In kase they do, i think yu hed betur aplly for the job. Mi son, hevunt yu eny respek fur the konvenshun-alitz ov the brekfus table? Yes i sez, i hev sum respek fur thoze, but i hevunt eny fur an ole hiperkrit. Yu leve the table he roard, an i went intu the kichen. I tel yu wot, if i wuz goin tu be er Christian i'd be wun; i wudnt purtnt tu be wun when i waznt, wudnt.

Director Jordan of the experiment station at Geneva, offers the opinion that the dependence on the experiment station can be carried too far. He believes in home study, and probably home experiment. But the experiment station belongs to the people. It should go no further than what is in accord with the solid and conservative sentiment of its constituency. He believes that the time has come for adequate appropriation to erect at the station an auditorium for holding meetings of this kind, in conjunction with a suitable exhibition hall.—New York Tribune Farmer.



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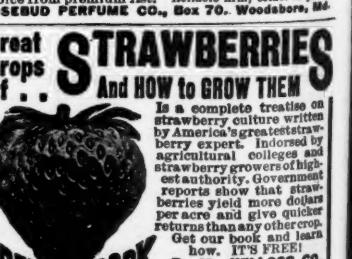
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Our general glory than the desire for in relation to Dept. of N. Y.  
The old order and fetish knowledge and young farmer forces that he educational in this about

## A STUDY OF FERTILIZERS.

Different Results Produced From the Application of Sulphate-Muriate of Potash—Know Your Soil.

There is no doubt that we need to learn more about the exact influence of the various materials we use in making fertilizers for increasing the productivity of our soil.

A good many years ago, when I was a station worker in North Carolina, we undertook some experimental work in the sand hill, or pine barren section, for the purpose of studying the effects of fertilizers, selecting the sand hills because of the absolute barrenness of the soil, which had gained nothing from the scattered growth of the long leaf pine and scrub oaks, because the constant recurrence of forest fires burned out any humus making material, says W. L. Massey, Salisbury, Md. in Tribune Farmer. The growth on this land was carefully dug and removed from the land, as we wanted only the natural and uniform condition of the soil. Our experiments included a fruit plantation and another plantation near by devoted to vegetables, field crops and tobacco. The influence of the fertilizers on the market quality of the crops was the chief object of study. The one crop in which the form of the potash made special difference was tobacco. Potash in kainite, being a sulphate but associated with so much chlorine, had the same injurious effect on the quality of the leaf as the muriate had, and it was found that only the high grade sulphate would give a leaf of the quality desired in the yellow cigarette tobacco grown in that section.

With fruit crops, either of grapes, strawberries, raspberries or blackberries, and with the tree fruits, no one could tell of any difference in quality from the different forms of potash.

But no matter what the fertilizer is that is used on the Irish potato crop this vegetable is never of the mealy and starchy character in the South as it is in the climate of the North, and as the early crop from the South is shipped in rather an immature condition and is not expected to be mealy it makes no difference whether muriate or sulphate of potash is used, and the grower can make the crop more cheaply with the muriate.

All the true bulbs, that is, the bulbs made up of overlapping layers or scales, are greatly favored by an abundant supply of potash in the soil. In fact, the greatest deficiency for the production of a crop of onions on a muck soil is in potash, which is always more lacking in a muck soil than in the uplands. In the red clay soils of the Southern Piedmont country potash is present in inexhaustible amount, and the chief deficiency is in phosphorus, while in all this sandy coast soil of the South Atlantic applications of phosphoric acid hardly pay their cost. Hence we find that differences in the soil are more to be considered than the differences in the way the crops take food from the soil, though to some extent this is also to be considered.

The head of the Bureau of Soils in the National Department of Agriculture says that all soils are alike, but I am very strongly of the opinion that he would find out his error if he tried to make a living on some of our soils.

I have been studying these matters on my garden soil here, and have found that here, too, I get very little result from the use of sulfuric acid used, while I get decided results from nitrogen and potash. One can easily see, then, the great difficulty in advising any one in regard to the use of commercial fertilizers with which one is not familiar. And yet I get more letters of inquiry from cultivators of the soil in regard to the fertilizer that should be used than on any other point in the growing of crops.

Our Southern truck growers use the highest grade fertilizer they can buy, and use it in immense amounts per acre. One man in South Carolina wrote me that he used five tons an acre on his lettuce, and finds that he is getting lettuce rotten in the heart of the heads. He used a fertilizer with 7 per cent. of ammonia, 6 per cent. phosphoric acid and 5 per cent. potash, and I feel sure that using that large amount was especially wasteful in nitrogen, and the excess of nitrogen was probably responsible for the rotting of the lettuce heads, and he would have had better success with a smaller amount of fertilizer with half the percentage of ammonia and twice as large a percentage of potash.

## Farm Industry.

Our generation can boast no greater glory than the awakening of intelligence and desire for really scientific knowledge in relation to the work of the farm. Says Dept. of N. Y. State Agricultural Report. The old order changeth; for guess work and fetish worship are substituted exact knowledge and a reason for things. The young farmer of to-day is obeyed by the forces that held his father captive. The educational influences that have brought this about are many and varied. This

great movement for agricultural education in its broadest sense has enlisted the sympathetic interest and unselfish cooperation of men of large affairs in the state and nation.

Few realize what this movement has already accomplished for American agriculture. Fewer still realize how it is developing and strengthening those qualities that give power and force to true American character.

## ORCHARD RENEWAL

Conditions Described Are Common in Chautauqua and Cattaraugus Counties—Methods of Procedure.

Few of our old family orchards are profitable investments. There was a time when they furnished the fruit for the family and a surplus for market which brought in a substantial income. Now thousands of acres are being cut down every year, says Circular—Penn State College.

The method of orchard renewal depends largely upon the condition of the trees and must necessarily differ in some degree with every tree. Generally speaking it will not be found expedient to spend time and energy on trees whose trunks are defective. Such trees may be saved by carefully removing the defective parts and filling with cement, but this is hardly warranted from a commercial standpoint.

The form of the tree will determine in a large measure the method of procedure. Some trees may not need renewal. They may be of good form and capable of bearing good fruit but are too high to permit either thorough spraying or economical harvesting. (Neither can be done with trees over 20 to 30 feet high. If higher, they should be headed back. In either case, the top may be full of disease or be old and gnarled and thus be unfit for fruit bearing, or it may have been pruned so that the only fruiting wood is borne on the ends of long, bare branches where it is impossible to reach it. In such cases, the problem is to grow a new top. In trees of this character, water-sprouts develop quickly. It is nature's method of prolonging the life of the tree. By cutting back these old branches, often leaving little but stubs, the growth of new wood is stimulated, or if there are no indications of new growth at the time of pruning it will almost invariably stimulate the production of new shoots from adventitious buds. In this method of renewal it is necessary to keep in mind the principles of pruning, especially the fact that a cut should be made close to the body of the tree or another branch when possible in order that it may heal rapidly. In some cases this, of course, is impossible. In all cases, however, the wound should be given a thorough coating of a thick paint of pure white lead and oil to prevent decay.

The initial pruning is only one step in the renewal of an orchard. It must be followed by intelligent annual prunings to thin out all excess growth of new wood and to bring the new top into proper form.

Fertilization is an important factor. Many of our old orchards lack plant food. This is evidenced by lack of vigor and lack of color of foliage. A liberal application of fertilizers should be given to assist in stimulating a vigorous growth of new wood. Stable manure applied every three or four years at the rate of ten to twelve tons per acre, followed with two or three annual applications of a complete fertilizer containing about 30 pounds of actual nitrogen, 60 to 75 pounds of actual phosphoric acid and 50 pounds of actual potash per acre, appears to give the desired results.

The addition of an extra amount of nitrogen for the first two or three years after pruning might be of advantage to promote wood growth. When the orchard is cultivated this may be secured by growing nitrogenous cover crops such as Crimson Clover, Cowpeas, Vetch, etc.

Old orchards which have long been in sod may be stimulated by cultivation provided it is not so deep as to destroy too large a proportion of roots. In such orchards the roots will be found relatively nearer the surface than in cultivated orchards. Thorough disking in the spring when the ground is easily worked may be sufficient for the first year.

Spraying is an operation now acknowledged to be necessary for the production of marketable fruit. Orchard renewal is ineffective without it. Old and neglected orchards are invariably the breeding grounds of insects and fungous pests and because they have become thoroughly established, spraying must be thorough and efficient.

In addition to the benefit the orchard may receive from intelligent renovation, the young orchards in the vicinity will be benefited because the breeding places of insects and fungi have been destroyed.

## There is a difference between fruit growing and forestry

yet most of the directions for fruit growing are directions for producing rapid wood growth only.

This means coming into bearing late and irregular bearing on account of lack of enough available mineral plant food to raise a crop of fruit and to set strong fruit buds in the same season.

## POTASH

Two years before the trees are expected to come into bearing the annual application of minerals should begin, using 50 to 100 pounds Muriate of Potash and 100 to 200 pounds of bone, acid phosphate or basic slag per acre.

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### A FARMER'S LETTER.

#### The Helpful Kind, Which the Editors Like to Get.

For a man with plenty of means at his command to take a run down farm and build it up into a productive farm is not nearly so difficult a job as for a man with little or no means at his command to take the same or a similar farm and build it up, says Tribune Farmer. The ditching, fertilizing (commercial and barnyard fertilizer), fencing, building, repairing and getting help at the right time all require ready cash. It also takes a few years to get the non-productive farm in shape to yield paying crops, which the man with means can stand, but the one without ready funds cannot stand it. Therefore, if we could have the results from some of the demonstration farms carried on by the government, taking things just as they are and putting the farm at some one, two or three lines of production for which it is adapted with little or no further outlay of capital (other than a man's strength and time), it would be of great value, I believe, to many of your readers.

Personally, I have failed to find very much help from the descriptions of many a well managed farm, whose owner turns out to be a banker or doctor or other individual well supplied with the wherewithal. I think I have generally read them and have gathered some ideas from some of them, but it has been wading through a lot of words for the few points gained.

Nearly all farmers around here are buying heavily of one or more grains or by-products—corn, oats, middlings, oatmeal and buckwheat middlings. Some have a little grain to sell; many not any. I have helped several thresh, and their grain would amount generally from 200 to 300 bushels, and some of those same farmers would require about 800 bushels of grain to keep their stock through the year. These figures refer more particularly to the last two or three years. If I had to depend on the grain that I raise I would have to get off my place, but I do not expect to. By means of small fruit I shall supplement the nearly empty grain bin until the time when I hope to be able to raise more grain.

I think for many the time has arrived when they should adopt as their motto, "This One Thing I Do," and then do it with a thoroughness and on such a scale that they will accomplish results worth having. Nevertheless, I hope to work into some other lines of fruit culture, together with a little grain culture, not conflicting with my berry work or, where it may, like binding wheat or rye (in time of berry harvest), secure this work done by outside parties.

### Dairy Hints.

Written for Green's Fruit Grower  
By Frank I. Hanson.

Increase the milk supply by keeping the cows gentle and kind. No cow can do good work when harassed and treated roughly, for they are sensitive animals.

Too much care cannot be taken of the churn, and this is one of the secrets of good butter. It should be washed immediately after using.

Why not raise the standard of the stock by owning a good bull. They cost something, but half a dozen farmers can club together and the problem is solved.

Turn the cows into the barnyard for an hour these pleasant days. They like a breath of fresh air and a bit of sunshine after being tied up in the barn for many days.

Keep the floor of the cow stable clean. It is a disgrace the way some farmers (?) allow the droppings to remain and become a regular nuisance.

When you buy a new cow don't be too hasty in deciding that you have been cheated. Give her time to get over her homesickness, for animals do have that frequently, before passing judgement.

### IN THE STABLE.

Hang a calender in the stable. They are handy anywhere and cost nothing.

Make it a practice to carry a wrench and a few feet of strong wire when going away from home with the team. They may come in handy in case of a breakdown.

Clean the windows in the stable. It is not a big job and they look enough better to pay for the trouble. It is business-like.

See that no careless person thrusts the frosty bits into the horse's mouth. It is cruel. Also take care that the collars are kept in good shape.

Keep the harnesses well oiled and hung up. Throw a covering of burlap over them and they will always look well.

The grain bins should be kept where the horses cannot get near them, in case they should get loose. Have each one protected with a hinged cover.

Do not keep the horses facing a strong light, as it weakens the eyes. If there is too much light a curtain can easily be arranged.

### WHO SAID PIGS?

The pig is a cleaner animal than most people think. Give him a fair show, dry quarters and a bed of clean straw, and see how neat he really keeps himself.

Too much care cannot be taken of the feed trough. Do not allow it to become stale and sour. Use hot water and an old broom frequently.

The hogs need sunlight as well as the other animals. The dark damp places where some house them is simply unjust. A few hours work and small expense will build a yard or supply a window.

Fowls have no business in the pig yards. Do not blame the pig if he chews up a few, for we cannot understand or very much change an animal's nature. Keep the hens where they belong.

—

### The Lake Road and the Orchards.

Think of riding for fourteen miles through apple trees! That is what we have just finished, for the Lake road from Pultneyville to Nine Mile Point leads through one of the great fruit belts of Wayne County, N. Y. Few people realize this, and when we read in the magazine articles about the wonderful orchards of the Oregon valleys, illustrated with picturesque and telling photographs, we think what a marvelous country that must be, and never stop to consider that right here at our very doors is one of the greatest fruit sections of any country in the world.

On our journey to Pultneyville over the Ridge we saw, as you read, dry-house after dry-house, and not a few orchards; but on the Lake road back we began to understand where the fruit comes from that supplies the housekeepers of this country with the ammunition for apple pie. Mr. Kipling mirthfully referred to a certain honorable section of New England as the "Pie Belt." If the phrase-making Imperialist had only visited Wayne county and the lake tier, he would have observed for himself the source of what made his pie possible.

These orchard men understand now how to handle their trees. On many and many of our rides we have passed by orchards that were falling into the sere and yellow leaf quite literally. Here every tree is groomed like a racehorse. The soil of the orchard land is plowed, and turned under, and sowed scientifically, and each tree, young or old, is inspected and sprayed and rubbed down by its trainers as if it were carrying on its branches the track honors of its alma mater. This season is of course the reign of his majesty the apple; but we passed through miles of peach orchards, and sometimes long reaches of pear land. The winds have been playing havoc with some of the orchards, and breastworks of red and green windfalls glowed under the trees.

Almost every marketable variety of apple is grown on these orchards. The aristocratic smooth-faced Northern Spy called by many the king of all New York apples, was everywhere. The useful Baldwin, delight of the Thanksgiving housewife; the pale Greening, and above all the honey-sweet Golden Russets of our fathers filled the air with their perfume. The fate of the Golden Russet is a curious commentary on public taste.

Some people hold that no better eating apple has been grown than the russet, but if you try to purchase it for your table at the retail fruit stores, you will be sent away empty. The merchants tell you frankly that it is a luscious flavored apple, but "there is no call for it; people want a red, bright looking apple when it comes to table fruit."

The apple situation in this part of New York state is a curious one. Last December the writer had a longing arise in him for Northern Spies, and tramped the stores searching for them. He was introduced to highly polished fat dowager-esque apples from Oregon, and from Washington and from Michigan at prices ranging from 5 cents each to three for a quarter, like cigars, but not a Western New York apple could he find. The fruit dealers and the grocery men said that there was "not much call for New York apples," and besides, there weren't any to be had anyway. Yet here we live in the heart of one of the great apple regions of the world; and the Rochester merchants say they are compelled to offer us fruit from three thousand miles away. I wonder if the Oregon fruit men have a sense of humor? The New York apple men seem lacking in it.

The liniment I think you have reference to is the one known as the white liniment, which is a good one for rheumatism in man or beast, old chronic sprains, etc. It is made by dissolving two ounces of white soap, or soap powder, in twelve ounces of soft water. Mix one ounce of spirits of turpentine, three ounces of spirits of camphor and two ounces of spirits of ammonia, shaking well together. Then add to the soap solution and put in a bottle with a cork.—C. D. Smead, V. S. Tribune.

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## Did You Ever Plant an Orchard?

If You Have Not, Something is Missing From Your Life.

By Charles A. Green.

My aged friend I wish to ask if you have ever planted an orchard.

No? Well then, you have missed a great opportunity.

There are thousands of people who have missed the opportunity of writing a book, of singing a great song, or of painting a work of art. They might have done these things, they might have reveled in such ideal work had they devoted themselves to the task with ardor and perseverance, but they have not done it, therefore, something is missing from their lives.

When I was a boy on the farm I planted an apple orchard. I was full of enthusiasm on the subject of planting trees. I had a vivid imagination, therefore, I could see into the future, and could see these trees filled with blossoms in springtime, musical with the songs of birds. When October came in imagination I could see the big red apples glistening through the foliage on every side. In imagination I could see before the orchard was planted, men coming with wagons, ladders and barrels to gather joyfully this beautiful fruit.

As a boy I was wise enough to select a hill top for the location of my orchard, the land lying something in the shape of a hog's back. Two sides of this field were so steep it was difficult to plow it or to harvest the grain after it had grown, and this is one reason why my father allowed me to set aside this field from ordinary farming and devote it to fruit growing.

Musk Melon  
grown at the  
Neville Farm  
New Berlin, Illinois.

Many folks when they see this picture, ask in all seriousness if the melon is really that big. All we have to say about this is—the melon is such a large one we know no one would believe us if we told how big it was, so we have made a picture of it and you can judge for yourself as to the size. A camera cannot lie, you know, but sometimes the operator can lie and have the camera back him up. Needless to say, this is a case in point.—Russell F. Neville, Ill.

My fruit growing readers will appreciate the difficulty I had in selecting varieties of apples for this orchard. I finally decided to plant the Baldwin, Greening, Spy, King, Roxbury Russet, with a few Twenty Ounce, Early Harvest and Sweet Bough.

The soil in this orchard was gravel mixed with clay and loam, rather hard soil to cultivate, with a hard subsoil. I had some difficulty in fitting the land in and its after cultivation.

Imagine a boy fifteen years old starting from his home with horse and wagon to visit the nursery seven miles distant to buy trees for this orchard, and this boy full of enthusiasm over his work. I was a devoted fisherman and hunter, but I enjoyed this orchard planting even more than hunting and fishing, for it meant more to my future life.

On the steep slopes of this hillside I found difficulty in making the holes in which to plant these apple trees, as the soil was very hard and tenacious. It required several hours for me to plant one tree on account of the hardness of the soil. I had doubts as to whether the trees would thrive in such seemingly uncongenial land, but they did live and thrive amazingly. Every year now I go back to this old orchard and I find the trees on these particularly hard spots as thrifty and productive as in any other part of the orchard.

A few years after this orchard was planted my father sold the homestead farm, therefore the gathering of the apples and the profit therefrom was left for the stranger. But throughout all these years and through the remainder of my life, this orchard will be mine, no matter who owns the land on which the trees are planted. Here is one thing which I am sure I have done for the welfare of mankind.

Every ambitious man has at some period of his life ambition to do something which

may survive after the individual's death. This was the feeling of the king who built the pyramids of Egypt and the colossal figure of the Sphinx, the builder of the Colossus at Rhodes and the temples of Harnack. Men know that the time will come when they will cease to exist, but they would like some work of their hands to live after they are dead and gone. What shall a man do to perpetuate his memory? He may put up monuments, but they disappear. He may write books, but they are laid aside. He may do acts of mercy and love, but they are forgotten. But if he plants an orchard I know of no more fitting monument. Think of the monument erected by Johnny Appleseed, the half crazy pioneer who went through Ohio in early days, sowing apple seed and protecting the young trees until large enough to be planted by the Indians or the early settlers. Johnny Appleseed will be known after the man who built the pyramids is forgotten.

Please notice that it is not necessary to own the orchard that you have planted in order to get satisfaction out of it. I take as much pleasure in seeing this old orchard that I planted in my youth in blossom and in fruit as though every apple added to my individual wealth. Nor is it necessary that a large orchard should be planted. If a man has planted about his home grounds fruit trees which continue to bear for a century he may take pride and pleasure in thinking of this work and in going back and seeing them in after years. The second orchard which I planted I will speak of in another article.

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### What Does it Cost to Grow an Acre of Trees in the Nursery?

By C. A. Green.

In reply to an inquiry from the *Rural New Yorker*, I will say that it is difficult to discover the average cost of an acre of any farm product and that it is more difficult to learn the cost of growing an acre of trees on an average than of any other product I am familiar with.

The risk in growing trees is greater than that of most crops, hence the difficulty in estimating its cost. There is the risk in planting the little seedlings, which American nurseries import almost entirely from Europe. They may not come in good condition, they may be of inferior quality owing to a drought or to excessive rains, but if they do come in prime condition the weather planting time may be so excessively dry as to prevent their successful growth. Insects may prey upon these seedlings before budding or dry weather stunt their growth so that they cannot be successfully budded, for the sap must flow freely in these seedlings or they cannot be budded. The inserted buds must go through a severe winter before they begin growth, thus many of them are destroyed during the winter months. If the buds survive the winter and begin growth vigorously, winds may break them off, blight or hail may strike them or insect pests may consume their foliage, or winter snow banks may crush them or mice or rabbits may consume their bark or an unusually cold winter may burst the bark near the ground or otherwise cause the young trees to perish. If the trees are stored in cellars they are not out of danger there of fire, frost or mildew. If the nurseryman ships his trees, as he is obliged to do, between the freezing weather of early spring or late fall, the trees are liable to be frozen and destroyed during shipment.

One of the greatest losses to the honest nurseryman is in growing and having for sale varieties that were popular but which this year are not in demand, therefore he is compelled to burn many carloads of trees that cannot be sold. He would indeed be a fortunate man who could look far enough ahead to be able to tell exactly what the buying public would order from his nursery so that there would be no surplus to be burned. It requires from two to seven years to grow a tree in the nursery and in two or three years public fancy is liable to change as regards the varieties desired. Further than this, during one year the public may desire to plant apple trees, but the next year they may switch off to cherry trees or peach trees.

One thing is certain, the fact that there are few nurserymen living who have made themselves very rich in the nursery business. I know of no man or firm who has made a million dollars. I know of few who have made one hundred thousand dollars, but I know of many, and probably the majority who after twenty years' experience in growing nursery stock are no better off financially than they were when they began. The man who makes big money out of a tree is the man who plants it and not the nurseryman who grows it. Anyone can buy a fruit tree for twenty-five cents, which the moment after it is safely planted on his place is, worth to that man from five to ten dollars and increases each year of its growth five dollars. There is no nurseryman living who can make so much money out of a tree as the man who plants it in his home garden for his home supply.

You mention in your inquiry four grades of trees, the first  $\frac{1}{8}$ " in calibre; the second or medium size,  $\frac{3}{8}$ " in calibre; the third,  $\frac{1}{2}$ " in calibre; the fourth,  $\frac{3}{8}$ " in calibre, the measure being taken 4" above the place where the bud or graft was inserted in the stock, but there should be only three grades of trees sold, barring out altogether the  $\frac{3}{8}$ " or fourth class tree which you mention, which are the ones usually sent out where ten trees are offered for fifty cents and no size mentioned. This fourth class tree,  $\frac{3}{8}$ " in diameter if as old as two to four years is a scrub tree which should be thrown upon the brush heap and not sold, for it is not likely to make a good tree even in the hands of a careful orchardist, with the following exception, and that is the peach. I had almost as soon have a very small one-year old peach tree as a very large one. I have a friend who writes that he planted forty little peach trees sent him by mail. These trees could not have been over one foot in height and yet on being planted by the side of the largest sized peach trees are now equal in size to the largest trees planted at the same time and have fruited as early and as abundantly.

I am inclined to think that the average profit of \$81.07 from an acre of nursery stock is not far out of the way. It would seem like a small profit. Many times the profit is far larger than this, but sometimes considerably less.

#### Indiana Orchards.

The members of the Indiana Horticultural Society say that the day of the apple specialist is here. Says *Farmer's Guide*.

The old idea that pests and diseases had ruined the orchards is not now accepted, because scientific research, the discovery of sprays and the invention of appliances have placed in the hands of the grower weapons that are driving out the orchard enemies and permitting the production of high grade fruit.

It is evident, too, that apple growing as a business is starting on a substantial basis, with a market at home and good shipping facilities to city markets. Years ago the orchard was only a sideline to general farming. Now many men and companies are making apple growing their chief source of revenue, and the growers have found it possible to reap goodly profits where they follow cultural and marketing methods along intelligent lines. Not only are farm people going in for apple production with assurances that fruit of high quality will always find a ready demand, but the business is proving an attractive field of investment for city people of means.

Everywhere the old discouraging conditions are giving way to optimism and diligent study of orchard questions. That this revival of interest prevails, with glowing prospects for the future to wide degree is evident at Purdue University, at Lafayette, where the horticultural department now has more inquiries on sprays in a week than four years ago were received in a month. The manufacturers of spray pumps and similar appliances say that last spring their sales in Indiana were from 50 to 500 per cent. greater than for the same period of last year.

That apple growing was in the last ten years on a decline was shown by the fact that the pests were able to keep ahead of the spray pumps but this order has been permanently reversed, and the prophets of horticulture say that Indiana is going to move forward for years to come, or until the state becomes an unrivaled land for apples. The sounding of a call "back to the soil," is a clarion note that is particularly pleasing to those who are interested in fruit. The success of growers in the Pacific northwest has been another factor in quickening the interest here in Indiana. In city, town and country the habit of eating apples is growing among the people, thus increasing the demand for the choicest fruit, and altogether the present holds bright promise to orchard owners where they are sending to market a product of the right quality.

#### Pruning Peach Trees.

Written for Green's Fruit Grower

By Jacob Faith.

The following answers some questions asked by your subscribers:

Peach trees need more pruning than other fruit trees because they make more rapid growth, bear younger, and are liable to break down with their load of fruit. They should therefore be trimmed to a low head, starting their limbs 12 to 18 inches from the ground and this will insure more than double the crop on tall trees. In trimming, cut off about half of each year's growth and the tree will live longer, and then the fruit can be picked much easier, without the use of stepladders. Sort when picking and what is full ripe sell in home market. Ship what is not quite ripe.

It should be remembered that the peach grows on last year's wood-growth. I never saw peach trees of over three years fail to form and develop fruit buds and now by the use of the orchard heater peaches can be grown every year without an outlay of from 5 to 12 cents per bushel.

Peach trees should be planted 14 feet apart each way, 270 trees per acre, and on sandy soil. I would rather pay \$300 per acre for sandy soil land to grow peaches than to take black gumbo as a gift. Peach trees will grow on land to rocky and stony to grow other crops, but they should be cultivated twice around as far as the limbs extend.

The best time to prune trees and vines is winter when they are asleep, before the sap starts in the spring, but sad to say there is so much pruning done in spring when the sap is thin and runs from the wounds, and then blackens and poisons the tree. This is true also of grape vines. But there are exceptions to the rule. When apple trees that don't form and develop fruit buds are pruned in May or June, with the leaves full grown it causes a check of growth and the forming of fruit buds which results in a good fruit crop the next season.



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Carrot, Perfected, 1000 seeds, fine.  
Carrot, Perfected Half Long, 1000 seeds, fine.  
Carrot, Perfected Half Long, 1000 seeds, fine.  
Carrot, Winter Giant, large, crisp, good.  
Cucumber, Family Favorite, favorite sort.  
Lettuce, Bell's Prize Head, early, tender.  
Musk Melon, Luscious Gem, best grown.  
Watermelon, Bell's Early, extra fine.  
Onion, Principe, 1000 seeds, fine.  
Parsnip, White Sugar, long, smooth, sweet.  
Radish, White Icicle, long, crisp, tender, best.  
Tomato, White Icicle, large, smooth, fine.  
Turnip, Sweetest Cormor, fair, sweet, large.  
Flower Seeds, all sorts mixed, large packets.  
Big Turnip, 1000 seeds, the finest packet.  
Bell's Giant Thick Leaf Spinach, None better.  
Cress or Peppercress. Needled on every table.  
Moss Cur'd Parsley. Finest greens grown.  
Mammoth Russian Sunflower. Largest flowers.  
Sweet Pea, 1000 seeds, on California Giant Mix.  
Big FREE Catalogue, 1000 seeds, 10c postage.  
Coupon for 10c—good with 25c order. Write today.  
Not connected with any other seed company.  
Address, J. J. BELL, SEED CO., Deposit, N.Y.

**COW BEANS**  
As feed: unexcelled, rich in protein. As fertilizer: stores nitrogen. As crops: big yielders. These legumes fit into all systems of farming. Write us today about seed, and ask for our booklet on cow peas and soy beans.

**HICKORY SEED CO., 103 Trade St., Hickory, N.C.**

**SEND ME 10 CENTS**  
If you will send me the address of two of your flower-loving friends, I will send you my bargain collection of Spencer Sweet Peas, Giant Orchids, flowering type, *Mar-turians*, dwarf chameleons mixed, Royal Star Pansies, Aster, finest mixed; also 30 seeds of the  
**GIANT MARGUERITE CARNATION**  
which blooms in 4 months from sowing; also "Flower Culture" and my descriptive catalog containing 48 pages. Write the co-  
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Reliable and Full of Life  
**SPECIAL OFFER**  
Made to build New Business. A trial  
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**PRIZE COLLECTION** Radish, 17  
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Write today; mention this paper.

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**H.W. BUCKBEE**  
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## Grow These Wonderful Prize Tomatoes.

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Full particulars  
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ask for our complete  
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vegetable, flower  
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3 Pkts. FREE.  
Giant Moon Daisy, a  
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large flowers, all  
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The Three new and  
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PARK'S FLORAL GUIDE to all who write me a  
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10 cents for Park's Floral Magazine a year on trial, including Surprise Seed Package, 1000 kinds, for big  
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Address: **GEO. W. PARK, B. 11, La Park, Pa.**  
Magazine 1 year and 10 pts choice Flower Seed, 15c;  
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are the best. On their own roots. Express paid  
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**"Dingee Guide to Rose Culture"**

Most reliable Rose Catalogue—108 pages. Mailed  
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is the greatest book on the culture of Roses and other  
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in natural colors. Gives all the experience.  
Tells everything about rose culture. Describes wonderful  
Hoover Roses, hardy plants, bulbs, seeds, etc., world's  
best for home planting. It is **FREE**. Write today.  
**HELLER BROS. CO., Box 260, New Castle, Ind.**

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Large package Giant Pansies  
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**FREE**  
SPECIAL OFFER: 10 varieties  
Burbank's Floral Gems and 10 sorts Spencer  
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On Strawberry, Raspberry, Blackberry, Gooseberry,  
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WE want every reader of this paper who has a garden to **TEST** these 6 splendid new vegetables. We know they will give such wonderful results that they will make thousands of new customers for us, and all we ask is for you to send your address at once plainly written on a Postal Card and we will mail you these 6 sample packets absolutely **FREE** for testing. Do it today before all the sample lots are taken.

## FANCY PICKLES

Giant Climbing Tomato—Most  
wonderful tomato we ever knew.  
Climbs trailers 15 to 20 feet.  
Fruits often weigh 3 lbs. each,  
very large and solid, few FREE with every lot.

Remember we will send a **Sample Packet** of all these 6 varieties of **SEEDS** absolutely **FREE** to every reader of this paper who has a garden and will test them. Several dollars worth of vegetables can be grown from this lot of seeds. Write your name and address plainly on a Postal Card and it will bring them.

Our 1912 CATALOGUE of Vegetable and Flower Seeds, Plants, and Rare Fruits with our Special Bargain List with Color Plates, will be sent

Address—**MILLS SEED HOUSE**, Dept. 24, ROSE HILL, N. Y.

## Does the Soil of Apple Orchards Need Enriching?

By C. A. Green.

It has been deemed in past years that the soil of apple orchards in New York State and many other eastern states requires enriching in order to keep the trees in health and in a condition of productiveness. One of the reasons why it was held by the W. N. Y. Horticultural Society that a fifty acre apple orchard in Bloomfield, N. Y. might not be a success was the fact that the owner could not get enough manure to properly enrich the soil on which the orchard stood.

Now we have bulletin No. 339, dated July, 1911, issued by the New York Experimental Station at Geneva, N. Y. stating that careful experiments have been made which seem to prove that apple orchards on fairly good soil do not need any fertilizers in the way of barnyard manure or anything else. If the facts thus secured prove to be well based, they will greatly increase the planting of apple trees, for there are many farmers who are prevented from planting orchards largely through fear that they will not be able to properly enrich the soil.

We all know that the roots of an apple tree extend far down into the subsoil though the feeding roots are largely in the upper layer of soil. There are few who realize that there is a large amount of fertility stored in the subsoil of most of the land of the eastern states. I have tested this question at my Rochester home on clayey loam near my dwelling. In grading the lawn on a three acre tract I removed the soil of the hill to a depth of two to three feet, placing this soil which was largely subsoil on the lower part of the lawns, thus leaving nicely subsoil on the hillside and subsoil on the lower grounds where it was drawn from the hillside. I had fears that this subsoil would not be fertile enough to make a good lawn, but was surprised to find that it did contain a large amount of fertility and that the grass flourished on it on the low land.

On the side hill I plowed and cultivated and planted garden vegetables, among which were corn, tomatoes, cucumbers, all of which thrived surprisingly, indicating the amount of fertility in this subsoil. I therefore have no doubt that apple trees on the average soil of the eastern states draw much plant food from the subsoil. But the Experiment Station in the experiments seems to say nothing about the trees getting plant food from the subsoil. This station simply states its belief as a result of experiments that fertilizers applied to apple orchards are wasted unless crops are grown in the orchard which will take up this added fertility.

These experiments are of great interest owing to the fact that the tendency of late years has been to advise the application more and more freely of fertilizers to the orchards. There is a test which can be easily made which will teach the orchardist whether his soil is impoverished or whether it is fertile enough. If the orchard has received cultivation from early spring (and early cultivation is that which tells most plainly) and it is continued up to August first, and there is less than six inches growth of new wood on the ends of the branches, it may be assumed that the soil is lacking in fertility or that some insect is sapping the vitality of the trees or some disease is present. But if the trees show in the new growth at the ends of the branches a growth of twelve inches or more, the indications are that the soil is fertile enough for the welfare of those trees. The above test, however, will not be a good one if the soil is not properly drained and tiled, for no apple orchard and no fruit of any kind can succeed well on soil that needs draining.

It is a notable fact, and one that should be considered more widely than is the rule, that is that you can plant small fruit plants on soil that has been so reduced in vitality by growing potatoes

or grain crops as to render it impossible to grow a paying crop upon that soil, but by giving these trees or plants careful cultivation you may secure vigorous growth and bountiful crops. I have proved this fact myself on my own soil.

The Experiment Station report concedes that on light sandy or gravelly soils, deficient in potash or phosphates, and more subject to droughts than ordinary soil, or soil that has a hard pan which the apple roots cannot penetrate, apple orchards may not succeed without fertilizers. The Station report assures us that there are thousands of acres of available fruit land in every part of the apple regions of New York State that are abundantly fertile for the production of large crops of superior fruit if given proper attention. Such land well located may, in the absence of buildings, be worth no more than one hundred dollars an acre in the absence of apple trees, but when apple trees are planted upon them and come into bearing, such lands may be worth from five hundred to one thousand dollars per acre.

### STRAY GARDEN NOTES.

**Vegetables and Trees Need Room—A Lesson Hard to Learn—Seed Peas.**

One of the hardest lessons that we as gardeners have to learn, and that we are extremely slow in learning thoroughly, is the need of each plant of the proper room for fullest development, says T. Greiner, La Salle, N. Y. in Tribune Farmer. The right time to thin is when the plants are small. At that time, however, we do not realize what size they will reach a few weeks later. The earlier orchardists have almost invariably made the same mistake. The present generation pays the penalty. The older apple orchards in this vicinity and elsewhere are doomed simply because the people who planted them forty or more years ago, did set the trees thirty feet, or at most thirty-five feet apart, the branches of adjoining trees now being interlacing and giving to the owners or renters in most cases not much chance to work between them with power sprayers, or to the sun any chance to reach the ground underneath. Fungous diseases, codling worm and scale have full sway. The few apples that grow on these trees are colorless, flavorless, worm eaten and spotted with scale. The tree planters of the present day who have been regular attendants at our fruit growers' meetings or are close observers, are setting their apple trees forty feet apart each way, and keep them trimmed low from the very beginning. They want fruit within more easy reach from the ground. The earlier planters thought

the best fruit grows twenty to forty feet above the ground. I have often been asked by people who have orchards of apple trees thus crowded what they could do to get them back into bearing and prosperous condition, and I have invariably pointed out to these inquirers that the first thing to do is either to cut the whole orchards down and plant new ones or to thin them by cutting out every other row, diagonally, thus reducing the number of trees one half, and giving the men a chance to get through the rows with a power sprayer. Cutting the tops out and shortening the side branches, as often suggested by the inquirers, are not a thorough nor the proper remedy.

Similar mistakes in crowding have also been made by planters of pear, plum and peach trees. Such mistakes were less serious, as these trees are of comparatively short life. I have seen most excellent crops of Bartlett pears taken off trees standing only twelve feet apart each way for twenty years in succession. But if planted a rod apart each way they would, with the same thorough cultivation, have been good for twenty years longer, and possibly have given the same aggregate amount of fruit in the same length of bearing period.

**Brief Story of War.**—A youthful Rochester lad with heart burning with patriotism told his father and mother, his brothers and sisters, that he had decided to enlist in the Civil War. He left home with bright hopes. He expected to distinguish himself for valor on the field of battle. He had no idea what war was, or what it meant to be a soldier. He did not dream of the privations of army life, such as camping out in the mud and sleet, tramping over muddy or dusty roads, laden with musket and knapsack, over marches from twelve to fifty miles in extent in a day. He knew nothing of the sufferings of wounded men lying upon the battle field exposed to the scorching sun without food, drink or medical attention.

One day, years later, I saw a sad looking man moving homeward, carrying on his shoulder a plain pine box about three feet wide and one foot square. Passing a neighbor on the walk, I asked "What is Mr. Harris carrying?"

"He is carrying the bones of his son who was killed in the late war."

How many such tragedies as this of the Rochester lad were enacted throughout every part of this country both north and south. How few there were then and how few there are now who realize that, as General Sherman said, "War is hell!"

Many a man doesn't leave his wife much when he dies because he left her so much when he was alive.

## YOUR GRANDFATHER WAS A BOY

when "Peter Henderson Seeds" began to establish a reputation for high quality and dependability. "Sterling" on Silver, "18k" on Gold and "Henderson" on Seeds are the marks which stand for Best.

**START RIGHT.** The success of your garden depends on the reputation behind the seeds. By the time poor seeds have proved themselves worthless it is usually too late in the season to start all over with good seeds. Start right, and prevent disappointment.

### What We Want to Send You

One copy "Everything for the Garden," a real dictionary of all things pertaining to it. Illustrated with over 800 photo-engravings and 5 plates in natural colors. The most beautiful and most complete catalogue you can imagine. Full of practical hints and instructions.

One copy "Garden Guide and Record," a book which should be in the hands of everyone. Tells just "How and Why." Planting schedules, cultural directions, "Tricks of the Trade," and even cooking recipes which will be appreciated by every housekeeper.

One packet Ponderosa Tomato

One packet Big Boston Lettuce

One packet Scarlet Globe Radish

One packet Invincible Asters

One packet Mammoth Butterfly Pansies

One packet Giant Spencer Sweet Peas

Packed in a Coupon Envelope, which will be accepted as 25 cents in cash toward payment on your next order amounting to \$1.00 or over.

All we ask is—tell us where you saw this advertisement and enclose 10 cents in stamps to only help pay cost of sending all the above to you.

**PETER HENDERSON & CO.** 35 & 37 CORTLAND ST. NEW YORK CITY **EST 1847**

## SEEDS OF ALL THESE VEGETABLES GIVEN AWAY FOR TESTING

WE want every reader of this paper who has a garden to **TEST** these 6 splendid new vegetables. We know they will give such wonderful results that they will make thousands of new customers for us, and all we ask is for you to send your address at once plainly written on a Postal Card and we will mail you these 6 sample packets absolutely **FREE** for testing. Do it today before all the sample lots are taken.

## FANCY PICKLES

Giant Climbing Tomato—Most  
wonderful tomato we ever knew.  
Climbs trailers 15 to 20 feet.  
Fruits often weigh 3 lbs. each,  
very large and solid, few FREE with every lot.

Remember we will send a **Sample Packet** of all these 6 varieties of **SEEDS** absolutely **FREE** to every reader of this paper who has a garden and will test them. Several dollars worth of vegetables can be grown from this lot of seeds. Write your name and address plainly on a Postal Card and it will bring them.

Our 1912 CATALOGUE of Vegetable and Flower Seeds, Plants, and Rare Fruits with our Special Bargain List with Color Plates, will be sent

Address—**MILLS SEED HOUSE**, Dept. 24, ROSE HILL, N. Y.

15 Day Radish—A wonder for quick growth.

Will produce radishes fit to use in 15 days. Is very crisp and tender, scarlet color.

New Sugar Parasite—Very hardy variety for home gardens. Roots large, very smooth. Flesh fine-grained, and excellent quality.

15 Day Lettuce—After once trying this variety you will say it is the quickest grower on record, always very tender, crisp and sweet.

60 Day Cabbage—Quickest growing cabbage in the world. Heads quick, very solid and splendid quality. Try it and you will say it is a wonder.

Fancy Pickles—Here is a cucumber to be proud of. It is a marvel of beauty, grows very quick and just right size for pickling. You should grow this excellent variety.

Remember we will send a **Sample Packet** of all these 6 varieties of **SEEDS** absolutely **FREE** to every reader of this paper who has a garden and will test them. Several dollars worth of vegetables can be grown from this lot of seeds. Write your name and address plainly on a Postal Card and it will bring them.

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Easy to mix — sure to kill. Death to all leaf-eating insects. Save your trees, fruits and vegetables. Put up in paste or dry form.

(Conforms to the National Insecticide Act of 1910.)

**Be Sure and Ask for SWIFT'S**  
and thus always secure GUARANTEED HIGHEST QUALITY.  
FOR SALE BY LEADING DEALERS EVERYWHERE  
MERRIMAC CHEMICAL CO.

Send for Circular. 32 Broad Street, Boston, Mass.

When you write advertisers Please mention Green's Fruit Grower.



## Fall and Winter Bearing Strawberries are Novel but Entirely Practical.

The above is a scene among our strawberries on Nov. 11, 1910. Nearly one foot of snow covered the ground, hiding almost every vestige of the garden. But under this great white blanket lay those big, luscious Strawberries! Our visitors on that day pronounced our Winter Bearing Strawberries as "a wonderful creation." They truly are. These extremely hardy varieties bear in the North from August to November, and in the South they bear all winter. They have yielded for us at the rate of 10,000 quarts per acre. At twenty-five cents per quart, a ready selling price during their bearing season, they net over \$2,000 per acre.

Why don't you grow that kind? It costs no more to care for them, and they make many times the profit. We have 12 distinct varieties; among them is the "Americus," the best for rough treatment. Try them. They will delight you. Price per dozen plants, \$2.50; per 100 plants, \$20. Set out a bed this Spring and surprise your friends. With all orders, we give our new book, "Farmer on the Strawberry." Sale price, 50 cents postpaid.

Order before the supply is exhausted. Do it now. Write for beautifully illustrated catalog. Its free.

**L. J. FARMER, "The Strawberry Man."**

Box 207.

PULASKI, N. Y.

When you write advertisers Please mention Green's Fruit Grower.

ANYBODY CAN LAY IT.

**Rubber Roofing**

Warranted For Twenty-Five Years.  
FREIGHT PAID To Any Station East of Rocky Mountains, except Texas, N. M., La., Ga., Colo., N. D., S. D., Wyo., Mont., N. M., La., Ga., Ala., Miss., and Fla., on all orders of three rolls or more. Special Prices to these States on request.

ONE-PLY . . . Weighs 35 lbs., 108 Square Feet, \$1.10 per roll.  
TWO-PLY . . . Weighs 45 lbs., 108 Square Feet, \$1.20 per roll.  
THREE-PLY . . . Weighs 55 lbs., 108 Square Foot, \$1.50 per roll.

TERMS CASH: We save you the wholesalers' and retailers' profit. These special prices only hold good for immediate shipment.

**Indestructible by Heat, Cold, Sun or Rain.**

Write for FREE SAMPLES or order direct from this advertisement. Satisfaction guaranteed or money refunded. We refer you to Southern Illinois National Bank.

CENTURY MANUFACTURING COMPANY, Dept. 118, East St. Louis, Ills.

**RHODES DOUBLE CUT PRUNING SHEAR**

Pat'd June 2, 1903.

RHODES MFG. CO., GRAND RAPIDS, MICH.

Dept. B

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders. Write for circular and prices.

## Planting a Young Orchard.

Written for Green's Fruit Grower

By Howard R. Lane, O.

About the middle of last April I plowed a piece of ground that had been to wheat last year and to corn the year before. I then harrowed it well with a spike tooth harrow which was heavily weighted. On April 18th I set thirty-seven apple trees. I dug the holes with shovel, spading it out, the first shovel-depth, which was about ten inches, I put at one side of the hole; then the next shovel-depth which was mainly subsoil, I put at the other side of the hole. I dug the holes about the size of a medium sized wash tub. I then put back in the bottom of the hole the first spading which was good soil, leaving a small hole in the center. There being a strong wind, I unpacked my trees in an out building near at hand. I took them in bunches of five or six, laying the bunch in burlap cloth which was kept well moistened. In this way I would set out one bunch then go back and get another bunch, being very careful not to let the wind strike the roots as it dries them very quickly. Holding the tree in my left hand I set it in the place I had left for it, carefully spreading out the roots in their natural position with my right hand and sifting well pulverized soil around the roots with my garden trowel which I carried in my pocket; then after all the roots were well covered I firmed it down well and after all were thus attended to I took the shovel and filled up the holes with the subsoil, having the trees about two inches deeper than they stood in the nursery row, and the top of the soil around the trees about two inches below the surrounding soil but not firming or patting down. Then after the first rain I put in about one inch more of dirt thus leaving the soil around the tree about one inch below the surrounding soil.

After corn planting, I moved an old rail fence and after sorting out the good rails, I took my sled and hauled the broken and rotten rails—a two horse sled load to each tree—and put them around the trees beginning at the lower side about five feet from the tree, laying the rails horizontally, carefully matching them so as to leave no open space except one of about one foot square around the tree. In this way I had a mulch about 10 by 12 with the tree in the center. I mulched about a dozen in this way. A bunch of shingles which had been torn off a building and lying in a decomposing heap mulched another; a treetop chopped in lengths mulched another; and after harvest I mowed the fence row along the road and a few large weeds which grew up around the barn and feed lot and mulched a few more trees. Now one half of the trees are mulched, and I shall mulch the other half this winter. Of the thirty-seven trees which I set out, all of them lived but one and it was one that was not mulched. It stood on a rather dry point and as there were no rains for about a month, scarcely to speak of in six weeks in the spring, I think my trees did well considering the season; and I believe that tree might have been living today if I had had the time or just took the time, rather, to mulch it as soon as it was set out. I cultivated the ground this summer and this fall I mulched it and sowed it to grass.

Where land is level it may be alright to use a dust mulch year after year, but where the land lays such as in Southeastern Ohio if we persisted in using the dust mulch year after year, the dust mulch would soon be traveling the Father of Waters and our trees eking out an existence on inorganic rock and subsoil. I have heard of straw, weeds, etc. being used as mulches but have never seen any account of old fence rails or treetops being used. However I experimented with them and find them very satisfactory. I shall continue to use such material as mulches. It is nature's own method. The forest trees die and fall to the earth making a mulch holding moisture preventing the roots of the living trees from being baked in summer or from being frozen in winter and eventually resolving back to the elements and being built up again by another tree into tree wood or its fruit. I believe it pays to mulch fruit trees. My trees that were mulched in the spring are ahead of the ones that were not mulched. Do not burn old rails, treetops, weeds, etc., dig up the soil and put them around your fruit trees and let the material which would otherwise go up in flame and smoke be built up into trees and eventually into apples which will grace your table or lend their cheery influence on winter evenings by the fireside to America's hope, the American farmer and fruit grower.

## Big Red Apples.

We have just finished marketing our 1911 apple crop from the farm orchard and have had one of the most successful years in orcharding with the least trouble in marketing our crop of fruit, in case of dispute it is better to "agree quickly with thine adversary."

despite the over-production of apples in our section of Ohio and adjacent counties of Indiana. The ease with which we commanded a market was because we had apples which took the eye of the people. When a buyer got one bushel he wanted more. When we began marketing our summer and our fall apples we could not get them to town fast enough, and this same condition existed till the last bushel of winter fruit was gone.

Careful pruning and proper methods in spraying did the whole thing for us. We need not be a market "hawker" to get rid of such fruit. It sells itself.

We sold King of Tompkins, Wealthy, Pauwauke and Northwestern Greenings properly packed in boxes which averaged fourteen ounces to the apple and were retailed out at our grocery stores three for a dime. We got \$2 per bushel for them, while unsprayed apples went begging at thirty cents.

We have in our cellar now several bushels of the same varieties, one of which will make sufficient fruit for two pies, and when pared and divided into twelfths will make one dozen good dumplings with an ounce of fruit to the dumpling.

Some apples, aren't they? And flavor, fine as silk! And what do we want with "bigger or redder" apples? Grown right here in Hancock county, O., where they say it is not a fruit country and fruit growing does not pay. Two hundred bushels of apples per acre from a twelve-year-old orchard netting in a generous fruit year \$180 looks good to us, and as though we have been well paid for our trouble and slight expense for proper pruning and spraying, says National Stockman and Farmer.

Old settlers told us, "Let the limbs grow so as to have more limbs to hold more apples." We say, "Cut out the branches, thin the trees out, let in the sunshine, spray well what you have left and grow one big apple well colored instead of three pale, scrawny, knotty specimens that look good to no one, not even the grower."

We never cut away big branches with the saw and the axe, but we do go mightily all winter long on nice days after misplaced small branches and thick-matted clumps where scale can harbor and fungus lurk. We do this all with the pruning shears and our special fruit-picking ladders, then we can spray thoroughly and the fruit will not grow out of reach of our ladders.

## ELECTRICITY KILLS BUGS.

Successful Experiments in a Spokane Valley Apple Orchard.

Electricity as an agency to destroy the codling moth and other bug pests is the latest innovation introduced in modern apple orcharding in the Spokane valley, where W. M. Frost, of Opportunity, Wash., and J. C. Lawrence, a practical grower of Spokane, have made what is declared to have been the first demonstration of its kind in the world. The test was made in a six-year-old orchard and more than a score of second-brood moths and many green aphids were killed in a few moments.

The apparatus consists of a storage battery to charge the incandescent light globes, each of six candle-power, which are netted with fine steel wire, coated with copper and tin, alternately. Attracted by the bright lights in the trees, to which the globes are carried at the ends of a covered wire, the moths fly against the netting, complete the electric circuit and are instantly killed, the bodies falling into a receptacle placed beneath the globe.

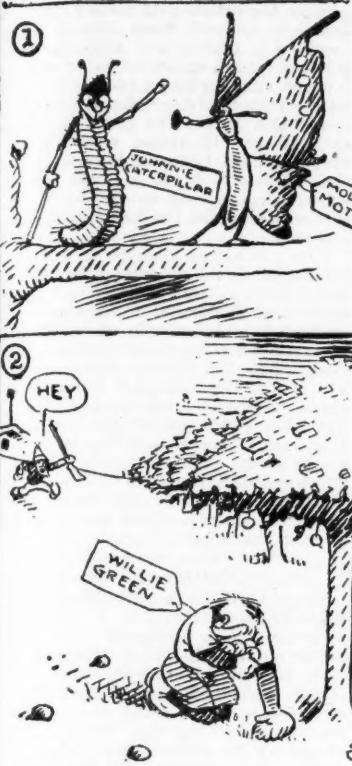
Mr. Frost estimates that one battery to an acre of trees will keep the moths under control, thus eliminating the usual spraying and saving many dollars annually for help, equipment and fluid. He is now preparing to wire his orchard of ten acres, containing 700 trees, and several neighbors who witnessed the initial test, are doing likewise. It is reported that several thousand acres of bearing apple trees will be equipped with exterminators by next spring.

If commercial electric light wires are extended to the orchard tracts, as they are in many of the valleys in Washington, Idaho, Oregon and Montana, the expense of batteries may be saved by making direct connection. The cost of covering the globes with wire nets is a small item and any electrician can do the work—Spokane Correspondence Boston Transcript.

In the neighborhood of Glen's Creek, Ky., it is said two neighbors differed about a strip of ground eight feet wide and containing only about one-eighth of an acre. They went to law to settle it, and the case is still undecided. Already they have spent eighteen hundred dollars, and before they get through with it they will have to spend about thirty-five hundred. Here is new evidence that in case of dispute it is better to "agree quickly with thine adversary."

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## PESTS OF THE FRUIT GROWER



—Rochester Herald.

### LARGE RESERVE OF APPLES.

#### Half Million Barrels in Storage in One Division of N. Y. C.

Affording a hint of the vast proportions that the apple business is assuming in Western New York is the information that in the towns along the Rochester Division of the New York Central alone there is a total of practically half a million barrels of apples in storage, says the Democrat and Chronicle. The tendency to employ Western methods of packing in the East, is shown by the fact that 2,500 boxes of apples are in storage, which, although insignificant in proportion to the vast total in barrels, is still indicative of the recent awakening of local fruit men.

Appended is a table giving a close estimate of the apples now in storage at the principal points on the division:

	Barrels
Albion	90,000
Lockport	90,000
Brighton	60,000
Medina	56,000
Gasport	52,000
Holley	50,000
Leroy	33,000
Canandaigua	18,400
Spencerport	11,000
Brockport	11,000
South Greece	10,000
Middleport	6,000
Adams Basin	2,000
Fancher	2,000
Total	492,200

It is to be appreciated that this table by no means shows the total quantity of apples in storage in Western New York.

#### Scientific Apple Culture.

A notable two years is the record of the Maine State Farm, at Monmouth, purchased in 1909. Not larger than ten-year-old trees were those on the farm at the time of purchase, though set in 1885 and 1886. Stunted by neglect they yielded, in 1909, but a crop of 90 barrels. Work of spraying, plowing and thorough cultivation was the rule rigidly enforced from July of that year. In 1910 the crop was 300 barrels, and in 1911 the total reached was 2,460 barrels.—Portland Argus.

#### Winter Protection for Young Fruit Trees and Bushes.

Written for Green's Fruit Grower  
By M. Roberts Conover.

To the excessive drying of the tissues in trunk and branch, and to the heaving of the roots is due the loss of many young fruit trees and bushes, especially those fall planted. This fatal drying of the delicate tissues so essential to future growth is more likely to occur when severe cold and winds immediately follow a mild spell than when the plant can gradually adapt itself to atmospheric conditions through gradually lowered temperatures.

Such varieties of fruit as are known to be tender or are planted in a location which favors activity during mild spells of weather in the winter, must be protected.

The canes of tender varieties of raspberries, blackberries and young grapes may be bent to the ground and covered with straw, leaves or earth. For the protection of young trees, however, the thatch of straw is best although leaves held to position about the tree by a circle of close-meshed poultry wire makes a fair substitute.

Where thatching is used, the straw should be applied vertically, wrapped securely with twine and the whole finished so smoothly as to be partially waterproof. On no account should bagging or fabric of any kind be used to protect the trunks of trees during winter. Such material admits water to the bark and invites decay.

In addition to top protection, fall planted trees should be mulched above the roots to prevent their heaving.

The mulch of leaves or straw if applied after the ground has frozen hard about young trees and bushes whose roots do not extend far below freezing depth prevents the forcing of the roots from their position when a thaw occurs.

The young strawberry bed should not be neglected in this respect.

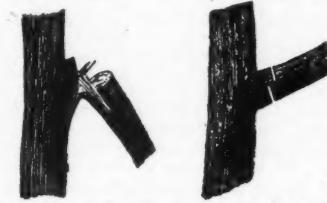
The proper mulch is applied to a depth of four inches and is not disturbed until after freezing weather in the spring.

In some sections, the winter protection of young trees involves defense against such animals as rabbits, field mice, or even deer. Where the small animals abound each young tree will require a guard extending to a height of twenty-four inches. A circle of close meshed poultry wire standing out about two inches from the tree makes a good shield against mischief of this kind. Where there are larger mischief makers as deer or goats, regular guards of heavy galvanized wire six feet high may have to be employed.

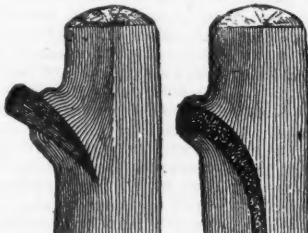
The action of wet and cold upon wounds left from pruning or from accident, is very injurious during the dormant period. The exposed wood draws and cracks furnishing opportunity for decay. A coating of paint or grafting wax should be applied. Trees half girdled may be saved in this way.

#### How to Remove Large Branches.

In order to facilitate the healing process in the plant, all wounds which are made should be left smooth; that is, if it is necessary to use a saw in removing a large branch the cut surface should be left smooth and clean, particularly around the edges. The saw should be sharp and should leave a clean cut, and this should in turn be made smoother by the use of the pruning knife or a sharp chisel, as the healing process starts quicker and progresses more rapidly when this



precaution is observed than when a rough and jagged surface is left. It frequently happens that, in order to obtain the best results in removing large branches, two cuts should be made—that is, the branch should be sawed off eighteen inches or two feet above the point of its origin in order to prevent splitting down and tearing off a considerable portion of bark. This is important to the life of the tree and to the success of the plantation, whether ornamental or economic, are well understood by all plant physiologists. The stub which is left when the branch is removed, if cut off at some distance above its origin, invariably decays and leaves a hollow branch, while the branch which is cut off close to its original almost invariably heals quickly, the new growth covering the wound. The accompanying illus-



trations appear in a bulletin published by the National Department of Agriculture.

Don't let the San Jose scale get the start of you if it should put in an appearance. Crush any pest before it gets a start and you'll have no pests.

If a man does not know how to prune a tree, he can with safety at least cut out all the suckers and keep the ground free from weeds and under brush.

## GENUINE THOMAS PHOSPHATE POWDER

(Basic Slag Meal)

### Grows Big Red Apples and Other Fruits

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### Genuine Thomas Phosphate Powder

AT THE

GREAT NEW ENGLAND FRUIT SHOW

Held at Boston, Mass., October 23-28, 1911

International Apple Shippers' Association's Cup for Best Commercial Exhibit of Packed Fruit. Won by Conyer's Farm, G. A. Drew, Manager, Connecticut.

Silver Cup for Best Display of Baldwin Apples offered by Governor Foss, of Massachusetts. Won by T. K. Winsor, Rhode Island.

Silver Shield for Best Exhibit of Rhode Island Greenings offered by Governor Pothier, of Rhode Island. Won by T. K. Winsor, Rhode Island.

\$25.00 Cash for Best Barrel of King Apples offered by W. & B. Douglas Company, of Connecticut. Won by Elijah Rogers, Connecticut.

First Prize for Best Barrel of Rhode Island Greenings. Won by Elijah Rogers, Connecticut.

First Prize \$50.00—Best 5 Boxes of Apples. Any Variety or Varieties. Won by Conyer's Farm, G. A. Drew, Manager, Connecticut.

Second Prize \$25.00—for Best 5 Boxes of Apples. Any Variety or Varieties. Won by N. S. Winsor, Rhode Island.

First Prize—Best Box Exhibit of Apples. Won by Conyer's Farm, G. A. Drew, Manager, Connecticut.

Silver Medal—Best Packed Exhibit of Apples. Won by Conyer's Farm, G. A. Drew, Manager, Connecticut.

First Prize—Best Box of Rhode Island Greenings. Won by T. K. Winsor, Rhode Island.

Sweepstakes for Best Box of Apples Packed for Market \$75.00. Won by Conyer's Farm, G. A. Drew, Manager, Connecticut.

Berlin Prize—\$25.00 Cash and Silver Medal. Won by Conyer's Farm, G. A. Drew, Manager, Connecticut.

Connecticut Pomological Society—Silver Medal for Best Table of Fruit. Won by Conyer's Farm, G. A. Drew, General Manager, Connecticut.

Massachusetts Agricultural College Sweepstakes for Winning Largest Number of Prizes. Won by Conyer's Farm, G. A. Drew, Manager, Connecticut.

Numerous Other Prizes. Won by the above and other users of Genuine Thomas Phosphate Powder.

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Key-Tree Brand  
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Combines Efficiency with Economy of labor and materials. Strong, high-grade, brass and copper, portable, with pressure gauge. Same pump for both air and liquid; one pump discharges entire contents. Produces a finer spray and uses less materials, and is equipped with our

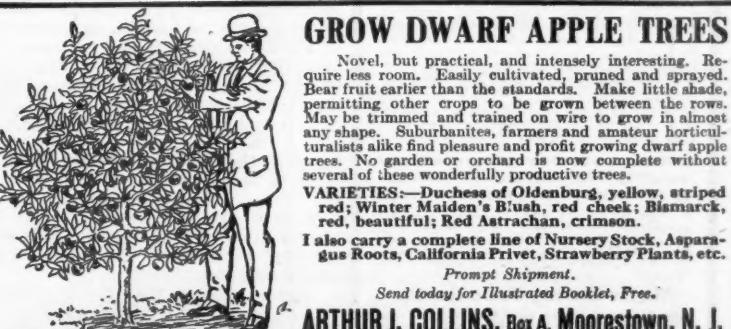
### WINKLE MIST NOZZLE

the celebrated power sprayer nozzle which distributes the spray more evenly than any other nozzle on the market—and cannot clog. Try Winkle Mist Nozzles on your power sprayer.

Write for free catalog and booklet on spraying.

TYLER MANUFACTURING CO., 76 Corliss St. Rochester, N. Y. Sample 75¢

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## GROW DWARF APPLE TREES

Novel, but practical, and intensely interesting. Require less room. Easily cultivated, pruned and sprayed. Bear fruit earlier than the standards. Make little shade, permitting other crops to be grown between the rows. May be trimmed and trained on wire to grow in almost any shape. Suburbanites, farmers and amateur horticulturists alike find pleasure and profit growing dwarf apple trees. No garden or orchard is now complete without several of these wonderfully productive trees.

VARIETIES:—Duchess of Oldenburg, yellow, striped red; Winter Maiden's Blush, red cheek; Bismarck, red, beautiful; Red Astrachan, crimson.

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and you get this high grade, world-beater Improved Jewel at a price lower than you would pay for a secondhand machine. Think of the magnificent saving. It's an incubator beyond surpassing anything ever before attempted. Hurry a postal or the coupon to me quick.

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is a record to be proud of, and we made it in 1911. We sell direct from "field to friend" and if we can't furnish what you want we say so before we ship our order.

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**Rupert's Tree and Plant Book**—Gives information about New York grown Fruit and Ornamental Trees and Shrubs; describes and illustrates those that are best for northern planting. Write now for a copy, and get our Wholesale Prices before you order.

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### Letters From the People.

"Prudent questioning is the half of knowledge.—Proverb.

**Apples for Maine.**—I wish to set out a new orchard and to renovate an old one, and I hardly know what methods to use in either. I would like to ask what method you would use in each case, and whether you have any literature on these methods or not, or where I might get the best advice. I would also like to know the best methods of packing, etc., and the methods of the west. The land is in the Hebron Hills, where apple trees thrive and bear wonderfully without care, and there are many wild trees throughout the woods and pastures. Land is a sort of glacial washed gravel and stony.

Same line with Rochester, in the same fruit belt, and Baldwins, Starks, Ben Davis', McIntosh Reds, etc., flourish here. I hardly know what to plant (set out) for fillers or standards. I want trees to bear fairly early (for a commercial orchard). What would be a fair price for Number 1 apples, that you think I should set out, by barrel, and where is an honest market for such apples? I do not know whether you answer personally or not but I will enclose stamped envelope for reply.—Chas. R. Tobie., McFalls, Me.

**C. A. Green's Reply:** If I should reply definitely to all the points mentioned by my friend, the writer of the above letter, I would have to occupy all the pages of a good sized book, for he actually desires to know all there is to be learned about apple culture, apple marketing, packing, and about varieties. If at the coming meeting of the W. N. Y. Horticultural Society a week should be devoted to lectures by the experts of our experiment stations and by remarks from the sixteen hundred skillful orchardists who are present at such meetings, even then all of the information that might be given in regard to the subject of apple growing and apple marketing and of varieties might not be thoroughly brought out and decided.

Mr. Tobie seems to be favored with soil particularly adapted to the growing of fine apples. It will pay him to spend considerable time in traveling about, attending horticultural meetings, not only in his own state but in other neighboring states, and in visiting nearby orchardists or farmers who have a few apple trees growing and in learning from these men what varieties succeed best in his locality, how to prune, where to plant, what the profits are, where to ship, etc.

Of the varieties of apples he mentions the Baldwin is the least hardy. Stark, Ben Davis, McIntosh, are hardy varieties. In some parts of Maine, Baldwin might not be hardy enough. I recommend Wealthy, Duchess, Hubbardston, Wolfe River, Pewaukee, York Imperial is a showy red apple but I am not sure that it would be hardy enough for Maine.

For fillers slow growers and early bearers, like Bismarck, Yellow Transparent, Fameuse or Snow apple, Roxbury Russet, are recommended.

I consider \$1.50 per barrel a fair price for a good fair number of one grade of apples, though they often sell at \$2.50 and \$3.00 per barrel.

**Editor Fruit Grower:**—I would reply to the question of Charles F. Billau—should the stems be left on the cherries when you pick them?

When picking the Early Richmond cherry always leave the stems on the cherry, for to pull them off causes the juice of the cherry to run out. When picking the English Morello cherry, always take off the stems from the cherry and leave them on the tree. It is not necessary to use shears to cut the stems. The juice does not run out of the English Morello cherry when the stems are pulled off.—E. P. Fisher, Kansas.

**Note by C. A. Green:**—While the above may be true as regards English Morello, my opinion is that in most markets the buyers would insist upon having the stems left on any variety of cherry no matter what the variety might be. It is well for the fruit grower to know the requirements of the market where he sells his fruit. City markets are far more particular about the details than rural markets.

**Iron and Knife for Trees.**—A large, thrifty plum tree used to bloom profusely every spring but no fruit matured. One day I read in your Fruit Magazine that iron was good for trees, etc. I found a quantity of very rusty old shingle nails, and with my hatchet drove them in the trunk at irregular distances from the root of the tree up to the first branches.

when the tree was in bloom (that year, and even after) a beautiful crop of large purple plums rewarded me.

Next, I had several fine cherry trees, but although they bore a few small cherries, the trees grew no larger. One day an old man was telling me that his pigs were "hide bound" and would not grow, so I thought my trees were in the same fix, so I took my knife and scored the tough bark from the ground to the limbs. They expanded over an inch that year, and were very fruitful and healthy afterward.

**C. A. Green's Reply:** I have never advised driving nails into fruit trees or slitting the bark in order to make them more thrifty or productive. Bear in mind that anything which retards the growth of a tree or shortens its life has a tendency to cause the tree to come into fruit bearing quickly. Thus if a tree is barked by rabbits or mice, that tree will immediately produce fruit buds and bear fruit several years sooner than it would naturally have done. When this friend drove nails into the trunk of her tree she injured the tree and interfered with its growth and naturally the tree began to bear fruit at once, the same as the tree did which had its bark gnawed by a rabbit. Pretty much the same thing occurred when the tree was slit with a knife. This slitting of the bark of trees is an injury and not a benefit and as it lessens the vitality of the tree causes the tree to produce fruit earlier than it otherwise would.

**Wages of Expert.**—A. C. McG. asks Green's Fruit Grower what wages he should charge and receive as an expert for buying the trees, planting a fifteen acre orchard and caring for it the first five years.

**C. A. Green's Reply:** This is a question which I could not attempt to answer, for the man who thinks of employing you knows far more of our ability and your general make up than I do. This would be a difficult question even for your employer to adjust to you. There are few competent men who would be free to undertake such work as you mention, therefore you have reason to expect good liberal wages, which would be considerably more than any ordinary expert laborer would receive. \$60 per month would not seem too much.

**H. S. L.** asked if improved apples can be grown on the Thorn apple by grafting or budding. Reply:—These trees can be grafted to apple or pear but in time the grafts will fail. My advice is not to attempt such grafting.

**Green's Fruit Grower:** Personally I am doing all I can to combat the "low head" practice or theory—fact is in our mature orchards we found some trees headed much lower or much higher than others—at trunk, but such variation is not correlated to the tops and often quite the reverse result is evident. A good apple picker cannot pick more standing on the ground than on a ladder, and he is working much harder because he has to sustain weight of fruit in bag unaided by ladder rungs or branches; a first class picker can pick more apples in a given time off the tree than he could pick off the ground. This has been tried out on a wager in Orleans county, and the result stood three to two in favor of the tree work. I have picked a good many apples myself, and have discussed the matter with experts.—C. F. Bly, N. Y.

#### Spots in Fruits.

**Editor Green's Fruit Grower:**—In Green's Fruit Grower for December, 1911, I find on page 14 an article relative to "Pear Growing in an Apple Tree." I am rather interested in this statement and have been conducting careful investigations of the instances of this kind for several years. If you can give me more exact information in this respect I would appreciate it greatly. In almost nine cases out of ten I have found that the so called effect of pollen in producing this phenomenon is not the factor which brings about that it is a simple case of bud variation. I have for example found pears which are normally green or russet, striped with bright bands of yellow or bands which are not russet, giving such pears the appearance of miniature watermelons. I have also found Spitzbergs which were half a clear bright yellow with not a trace of red or Newton Pippins of which half was red or striped red.

There are all degrees of this peculiar striping. It is also to be supposed that on occasion the quality or texture of the flesh or often the shape of the fruit may be influenced in this same way. I believe that pollination has very little if anything to do in bringing about an immediate change in the fruit other than a change in size. However, I am after facts and if you could give me more definite information with regard to the cases which you cite I assure you that I would appreciate the favor very much indeed.—E. J.

Kraus, Corvallis, Ore.

**C. A. Green's Reply:** Having been an editor for over thirty years and a fruit grower all my life, many instances of a puzzling nature along the line of your inquiry have been placed before me.

Since the article you speak of was published in Green's Fruit Grower I have received a photograph accompanied by a letter from a subscriber who says that a grape vine growing under or in contact with an apple tree produced grapes that resemble apples. The grapes are abnormally large. He shows a sample of the grapes which I have photographed for the February Fruit Grower. Another subscriber has sent me apples that are shaped like pears but are apples in flesh and core.

I have made no attempt to solve these problems. I am mystified by the fact that I found a branch of an Early Harvest apple when I was a child, which was not grafted but the growth of which forced it into a worthless winter apple growing along side the Early Harvest apple. The end of this branch of Early Harvest apple bore miserable winter fruit just like that produced by the neighboring tree, which was a variety that nobody would graft, and there was no graft or budding, therefore I am inclined to say with Hamlet: "There are stranger things on earth, Horatio, than are dreamed of in your philosophy."

#### Pedigreed Trees.

**Reply to Mr. Edward L. Markell, N. Y. State College, Ithaca, N. Y.**—I have had experience with pedigree stock and am of the opinion that there is something of value in it, but the pedigree stock most largely advertised through the rural press as superior to all other stock is on the average untrustworthy, being made use of simply to attract sales, whereas the pedigree idea may not be carried out at all by these advertisers.

In tramping over Green's Fruit Farm with notebook in hand during the fruiting season, I scarcely ever fail to find certain bushes of Diploma or Red Cross currant bearing larger fruit or fruit in greater abundance than the majority of the bushes. In going through the apple, quince, peach or pear orchard I find certain trees bearing larger fruit or in greater abundance than others. It is not safe to jump at a conclusion in such cases, for if there is less fruit upon the currant bush or the apple tree than there is on its neighbors, there is good reason why the fruit should be larger.

There is no question raised about the desirability of pedigree grain or pedigree cattle or horses. Farmers feel assured that if they go through their cornfield and select the best ears of corn or the most productive stalks and continue this practice for a series of years, they will greatly increase the value of this strain of corn or pedigree corn. I see no reason why we should not expect similar results as regards the selection of the best fruit producing bushes, vines or trees.

Aside from securing an improved strain there is great benefit accruing to the purchaser of nursery trees and plants if they can feel assured that the nurseryman has cut his scions from trees which the nurseryman deems are bearing superior fruit even though the fruit is not superior, for the orchardist, can feel sure that he is getting the genuine variety and that the scions are not cut from the wrong tree, as some times occurs in the most carefully managed nurseries. I know of an honest nursery firm doing a large business throughout the country, who had unknowingly been budding and selling hundreds of thousands of peach trees honestly supposed to be Crawford's Early, but which were in fact the Chinese Cling. A neighbor of mine, having confidence in this nursery firm, secured buds of Crawford's Early from them with the assurance that they were correct, and this neighbor continued to propagate the Chinese Cling for Crawford's Early for ten years without knowing of his mistake, when at last the error was discovered.

In order to be more positively assured that our varieties are correct we aim as far as possible to cut scions from bearing trees at Green's Fruit Farm, where we have over one hundred varieties of apples, the tree of which are of bearing age.

At Hilton, N. Y., an orchardist has a Twenty Ounce apple which is far more highly colored than the ordinary Twenty Ounce and yet in other respects it is a Twenty Ounce apple, but it would not be recognized as such. A trustworthy friend, James Norton, now deceased, formerly of Farmer Village, N. Y., assured me that in that section they were growing apples similar to Hubbardstones, which were superior to Hubbardstones in size and color. I am propagating a strain of Baldwin apple which seems to me to be of better quality than Baldwin and of more attractive color. I have a cherry which seems to differ from Black Tartarian in shape and size and which seems to remain in perfect condition on the tree for a much longer period than Black Tartarian.

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## What Apples to Plant.

Chas. A. Green:—Last season I bought trees to start two orchards, one as a commercial orchard and one for a home orchard. My commercial orchard consists of six varieties as follows: 1 row Baldwins; 1 row Kings; 2 rows Johnathan; 2 rows Spy; 2 rows Banana; 2 rows Green's Gold.

I wish to add this spring to one side of this orchard about 25 trees and do not wish to add any more kinds of fruit and had partly decided to fill this block with Johnathan, would like the Spy, or Baldwin but understand that the Johnathan comes into bearing much sooner than the above varieties, this however would give me over 40 Johnathans about double the amount of any of my other kinds.

Would you recommend this selection?

Would you advise planting many winter Bananas. Already have about 20 of them. If you will kindly answer these quires personally addressed. You will confer a favor.—G. W. Ellithorp, Ind.

C. A. Green's Reply: I cannot recommend you to plant more of the Jonathan apple unless you have fruited it and found it valuable with you. With us it is very small and I fear it would be very small with you.

Wealthy is a large red apple and very hardy and beautiful. McIntosh is a valuable red apple of high quality, not so large as Wealthy. York Imperial is a winter red apple, large and attractive. Banana is one of the finest apples we grow at Green's Fruit Farm. You cannot make a mistake in choosing from these four valuable varieties. Jonathan begins to bear fruit earlier than Spy.

Editor Freen's Fruit Grower:—I know of a fruit farm in southern New Jersey, that is on the market for sale. A few minutes from R. R. station on line direct to Philadelphia. Has 3000 pear trees, about 30 acres. Kiefers predominate, some Seckel, LeConte and another kind. 12 acres said to be in fine condition as any one would ever expect pear trees to be in. Trees are between 5 and 20 years. 800 Peach trees 4½ years old said to be in very good condition.

15 acres in grapes, I do not know the variety. This place is now offered for \$6,500 an "unusual bargain." Am green about fruit. Do you think such supposed a bargain as this would remain on the market 2 or 3 months?

How would you advise me to investigate this place so that in case I bought, would not get stung.—Jno. Ruth.

C. A. Green's Reply: You say nothing about the buildings, but in buying land the buildings are an important consideration. Often the buildings are worth as much as the land. The LeConte is not a valuable pear.

I would not attempt to place an estimate of the value of land which I have not seen. It requires good judgment and long experience to estimate carefully and considerately the value of a fruit farm such as you mention. The price asked, I understand, is a little over \$200 per acre, which would seem to be a low price, but no one knows the value of this land so well as the present owner.

Get an experienced fruit grower to look over this farm with you and go with him to neighboring farmers or fruit growers and inquire of them about the value of this orchard. If the land is low and needs draining don't buy it.

## Why a Back Yard?

Editor's Fruit Grower:—Why should that part of one's premises behind the house be a sort of disreputable spot one is ashamed of? Here in California we have no "back" yards, where it is cluttered with trash. Either a nice lawn and trees make it the pleasantest and most retired part of the place, or else a neat garden occupies the space.

How do we manage it, you ask? Well into the small wood shed covered with vines goes all the wood, coal, tin cans of oil, tools and odds and ends. Trash is burned up in the little stone furnace at one corner. Garbage to be sure must be cared for. If one lives where it is not collected, it may be piled in a fertilizer heap where go the lawn clippings, old weeds, leaves, and the like, and over it regularly is thrown loose dirt and lime. It makes in course of time a very rich compost. Our compost heap is behind the barn with the barnyard manure. This is regularly limed, and every month or six weeks is used up on the garden, yard and under trees, being worked into the soil each time with a spading fork.

As for tins, broken dishes and the like, two barrels beside the barn are used for them. When they are full they are carted away.

The great secret of not having a cluttered back yard is to keep things picked up and have things in place. Then the barrel can be used for garden, or for grapes and berries, or for flowers, or all com-

bined. In mine I have grapes, berries, currants and flowers, as the garden lies beyond in the region of the barn, and this part of the place is the most attractive of the grounds, for under the trees are hammocks, easy chairs, tables and couches. Here we read, sew, prepare vegetables, sometimes eat and sleep, and live almost wholly out of doors, yet out of sight of the inquisitive street.—Georgina S. Townsend.



F. D. Hawkins, (W. Va.) picking Rambo apples. These trees are seven years old. Last year the yield was twelve bushels from two trees. These trees came by mail as premiums with Green's Fruit Grower seven years ago.

## Cornell University on Eggs of Insects.

Green's Fruit Grower:—The eggs of the insect pest that you send are those of the Forest-tree Tent-caterpillar. Some times this insect is a serious pest to fruit and shade trees, although its main food-plants are the forest trees. On fruit trees it can be controlled by the usual methods of spraying with arsenate of lead very early in the season. On shade trees it is much more of a serious problem. —Glen W. Herrick.

Editor's Note: The above eggs of insects were sent to us by a subscriber. The eggs resemble those of the tent caterpillar with this exception; the eggs of the tent caterpillar are in one irregular-shaped mass, often passing entirely around a small twig, whereas this forest tree tent caterpillar's eggs were in rings regularly around the twig, each ring separate from other rings, thus here is a way of distinguishing the eggs of the ordinary tent caterpillar from the eggs of the forest tree tent caterpillar.

It is our practice at Green's Fruit Farm to go through the orchards, examining the branches and removing and burning any twigs containing the eggs of tent caterpillars, which are generally freely found on most orchard apple trees. I have never seen at Green's Fruit Farm eggs of the forest tree tent caterpillar.

## Orcharding On Shares.—How should Fruit Be Divided?

Mr. Charles A. Green:—A neighbor has an orchard of 200 apple trees in a thrifty condition 15 to 20 years old, no San Jose at present. The situation favorable. He wants me to take the orchard a number of years and spray it as needed and pick the fruit for one third. Is this enough? If not what share should I have.

All I expect of you is an opinion from the facts given you. Will send in my subscription soon.—M. T. Kendall, Pa.

C. A. Green's Reply: The conditions and circumstances are so varied in the proposition you speak of that I could not advise a laboring man depending upon his wages to accept such a proposition as you suggest.

You would have to consider first the locality. Is it one of the best orchard localities? Then the question of the soil, its elevation, its drainage, its fertility, would have to be considered. Then the question would arise regarding the varieties of fruit in the orchard. If they were unwisely selected the orchard would not be nearly so profitable as though the trees were of the best varieties for that locality. Then there is always uncertainty as to when an orchard will come into bearing and when it will be at its most productive age. Years ago I knew of an orchard that had been planted twenty-five years and was still unproductive owing to the fact that the land was wet.

The best thing for the owner of this orchard is to take all of the risk himself and reap a large portion of the reward. The best thing for any laboring man to do under such conditions as you suggest is to get his daily or weekly wages, for he cannot afford to take chances.

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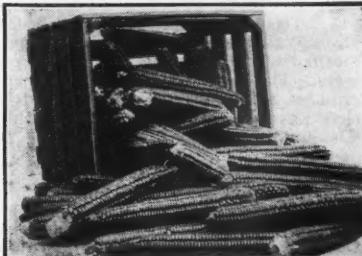
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Edw. Erkel, Le Sueur, Minn., writes us as follows: "I have nothing but praise for the Minnetonka Apple, out of 9 trees purchased of you, 7 are alive and doing finely, was obliged to thin out fruit as it was too heavy for the trees, picked 10 bushels and there was plenty of fruit left."

C. Hennings, Willmar, Minn., writes: "The Minnetonka is a lovely apple, both in appearance and taste, and I think finer than the Wealthy."

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## AN ILLUSTRATED MONTHLY JOURNAL

## GREEN'S FRUIT GROWER CO., Publishers

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## CURRENT COMMENT.

Reputation is an invaluable asset. Do the products of your farm have a reputation? If not why not?

Benjamin Franklin.—Let no pleasure tempt thee, no profit allure thee, no ambition corrupt thee, no example sway thee, no persuasion move thee to do anything which thou knowest to be evil: so shalt thou always live jolly, for a good conscience is a continual Christmas.

"Forestry for farm and school" is an enterprise which the Kentucky Agricultural Experiment Station is trying to promote and to which the Louisville "Courier Journal" is lending its support. The agricultural department of the state is urging farmers to plant trees on their land "which not only yields no income but also stands as an eyesore," of which there is a considerable amount on the farms of every state.

Senator Borah of Idaho has introduced a bill in congress authorizing the secretary of the treasury to advance to the secretary of the interior an additional \$15,000,000, to be used with the \$20,000,000 already available, in hastening the completion of government irrigation projects. The bill will also enable the government to square accounts with states that have been unjustly dealt with in past apportionments.

Preston, Kansas, has discovered the image of a god of some prehistoric race. It was found seventeen feet below the surface in soil that apparently has lain there for ages. It was in a formation of very hard yellow clay and shows the head and bust of a man. The figure is made of material resembling plaster of paris, although much harder. There were numerous fragments of the same material lying near, and efforts are being made to place these together to determine what kind of people made the image.

It comes with all the force of authority, therefore, when no less a person than Thomas A. Edison gravely announces that he not only approves of mince pies, but eats them for breakfast. If the Wizard of Menlo Park can make all the forces of nature his slaves on a diet of mince pies for breakfast, surely the common run of humanity need have no fears. Thus fortified of a morning, we ought to be able to accumulate enough to meet the electric light bill and have a little change left to buy an occasional talking machine.

George H. Paul of Washington, Iowa, is in Colorado making preparations to plant 1000 acres to fruit trees in the spring. These orchards will be set on the Teller tract a few miles northwest of Pueblo and the plantings will consist mostly of apples and cherries. A few years ago this man struck out in life as a poor boy and began peddling milk with a hand cart. Finally he drifted into land speculation by investing his savings and today is a millionaire several times over, which shows that opportunity is not yet dead, but is ready for the boy who

S. T. Campbell of Murray, Nebraska, is out \$500 in backing his judgment against the claims of Bert Van Houton of Thurman, Iowa, as a corn husker. Two thousand people saw Van Houton husk and crib 235 bushels of corn in ten hours. Besides the \$1,000 which Van Houton and Campbell wagered on the

coast about 1,000,000 tons of potash per year, worth, he says, about \$40,000,000.

Assuming that the potash content of the seaweed is as 1 to 3, then for every ton of potash produced three tons of seaweed, presumably dried, must be treated. That is, if 1,000,000 tons of potash are produced, 3,000,000 tons of dried seaweed must be harvested. For this work specially designed and constructed vessels, useless for any other purpose, must be built and equipped.

## The Question of Fruit.

Dr. Axel Emil Gibson in the "Dietetic Hygienic Gazette" discusses the value of fruit as food. There are, he says, two questions to be considered in relation to fruit as an element of diet—the biologic and the physiologic, the racial and the typical, the predispositions arising from native traits and environments, and the intolerance to certain foodstuffs due to their constitutional or chemical peculiarities. Fruit does not combine well with other foodstuffs; such a diet invites gastric and intestinal troubles. Fruit, in order to be thoroughly enjoyed and do the most good, must be eaten alone. Even then fruit must be administered with care. As to the choice of fruit, if the digestion is weak, the apple, the pear, grape, or orange, corresponding to conditions and seasons of the year, are the safest and most readily tolerated of all fruits. Dr. Gibson thinks that as meat was necessary for the attainment by force of arms of material success, so is fruit essential.

## Dynamite Ditching.

The department of agriculture is a little late in coming around to the fact that ditches can be dug with dynamite. This work has been going on here in the west for several years now and the scheme works all right in hardpan, rocky, trashy and wet land. Wilcox's Irrigation Farming described this process when it was first written fifteen years ago, but Secretary Wilson has just heard of it because he is always just that far behind the procession. The digging itself is as simple as falling down. A row of holes two feet apart and six feet deep are bored along the middle line of the proposed ditch and each hole is loaded with four one-half pound sticks of forty per cent. nitroglycerine. The charges are then exploded at once and the result is a ditch 6½ feet deep, six feet wide on the bottom and eighteen feet wide on the top. The cost is less than a ditch three feet deep and five feet wide dug by hand. Any lessening of the cost of constructing ditches is a good thing for people who have irrigating propositions on hand and some fellows down in Logan county have progressed so far along this line that they have invented a drum digger that will move dirt for less than two cents the square yard. Contractors usually figure this work at from fourteen to thirty cents, so that we are making progress in a private way.

## Value of Barnyard Manure.

While the actual plant food contained in a ton of well-preserved barnyard manure is worth, according to officials of the Department of Agriculture at least \$2.50. It is safe to say that the farmer will derive nearer \$4 worth of good from it. Barnyard manure is not only a plant food, but it greatly improves the mechanical condition of the soil and multiplies beneficial bacteria.

The people over at the Department insist that farm manure should be handled with great care. It should never be left in the open yard or piled in the field for any length of time, as much of its plant food will be leached out. Neither should it be stored loose under sheds, but it should be packed down and kept wet enough to prevent heating, which would drive off nitrogen. This tremendous loss from improper handling easily explains why farmers find it necessary to use such large quantities of manure to derive much benefit from it. By covering the manure heap with certain substances it has been found that not only can this loss be prevented, but the stock of manure can be very greatly increased. These substances, straw and leaves, have a fertilizing value ranging from \$2.96 per ton of wheat straw to \$3.60 per ton for marsh hay, the latter containing 54 per cent. of potash, 17.2 per cent. of nitrogen and 10.6 per cent. of phosphoric acid.

If the shoots on the fruit trees grow too slow, say only five or six inches a year, the soil needs enriching. The growth should be from fifteen to thirty inches each year.

Since the farm is the source of our wealth it behoves us to learn more of our property, and the methods to keep it at its fullest producing capacity without impoverishment.

Selecting Fruit Trees for Planting.

Written for Green's Fruit Grower  
By M. Roberts Conover, N. J.

Whether one intends planting an orchard or a small fruit garden, he should not blindly follow the advice of anyone whose experience is confined to any locality where soil and climate differ from his own.

It is a good plan to personally inspect the fruit growing conditions in one's own neighborhood and note the successes and failures of certain varieties giving, of course, due credit to probable causes resulting from the mode of culture. Experimenting with varieties not known to be hardy in a given locality should be confined to small garden plots, using them in or only when proved reliable. Varieties of fruit which are known to sun-scald or winter-kill in some regions will withstand severe weather in localities protected by wooded hills from severe winds.

If possible, one should go personally to the nursery and see the stock for himself. Moreover, it is exceedingly unwise to buy trees of nurserymen who have not established a reputation for reliability. The substitution of varieties for others ordered without previous arrangement is vexing and expensive.

Good specimens of trees should have good roots and an ample top betokening vigor. These top branches must be cut off more than half. The bark should not be shriveled or shrunken, but plump, firm, smooth and free from insect attacks. If the trees come dry, shriveled, burry in moist soil root and branches for four days.

All the nurserymen label each tree and pack the roots in damp moss securely wrapped with canvas.

For spring planting it is better to have trees shipped from a nursery located under climatic conditions similar to the proposed orchard or garden site. Trees shipped from a warmer locality to a colder one are sure to suffer in early spring.

Where the fruit is to be grown for market its firmness or shipping quality must be considered as well as its flavor. In the case of apples and pears, long-keeping characteristics mean more money to the grower.

For the garden, one may grow fruit merely for size and flavor without hesitation. Some fruits are so well adapted to preserving and canning as to take precedent of other varieties. Especially is this so with apples and pears. For instance, the Bartlett, a fine luscious pear when properly ripened and eaten raw often proves flat of flavor when canned. On the other hand, the Anjou and the Kieffer make excellent canned fruit acquiring a fine sprightly flavor in the cooking.

For a small fruit garden these varieties of fruit will give a satisfactory succession of fruit.

Apple—Red Astrachan, tart, middle of July; Yellow Transparent, tart, August; Duchess, August and September; Fall Pippin, spicy, mid-autumn; Baldwin, November and early winter; McIntosh, long keeper, fine quality, red apple.

Pears—Wilder, early, late July; Bartlett, August; Seckel, August; Anjou, September; Kieffer, winter.

Plums—Red June, Early Abundance, Niagara Plum, Peach—Mountain Rose, Early August, Crawford's Early Yellow, late August; Elberta, yellow, September; Crawford's Late, middle of September.

Cherries—May Duke, Early Richmond, tart; English Morello, one week later, subacid; Montmorency, very late; best.

The following apples are among the popular market sorts:—Northern Spy, Roxbury Russet, Baldwin, Gravenstein, Banana, King, Rhode Island Greening, Ben Davis.

Gravenstein sometimes sun-scalds in localities where severe cold winds follow mild weather. Where the ground freezes deeply, the young trees may not recover.

In such regions, Wolf River and Northern Spy will withstand these conditions better.

For market pears Kieffer, Bartlett and the Anjou are among the popular varieties.

An Essay on Truth Strechin.

Written for Green's Fruit Grower  
By Unkel Dudley.

In lakin ouvr sum seed katalogs an reedin the elongated truths in them we wundur whi it waz sum pepul hed such an avershun tu the truth. An as we luked at the picturs an red the deskrip shuns we kudn't se how pepul who kaul themselves onest kud mak such expanded statmunts. We think that the wun who reite them must hev hed an indy ruber imaginashun an want afraid tu stretch it tu the brakin pint. We wil say rite here that pepul with indy ruber imaginashuns ar tu be pited fur of their statmunts hev tu be takun with lots ov salt. Unless you ar abul tu lik the stufin rite out ov the uther feller, it ain't konsidur good form or manurs tu tel him he lize. Yu ken tawk erbout expanded statmunts an elongated truths tu him and (unless his hair iz red) you wont be in much dangur ov loosin the use ov wun or both eyes, fur er while.

Perhaps thar ar sum pepul who don't kno what expanded statmunts an elong-

aited truths are. Fur the benefit ov such pepul we wil giv sum ilustrashuns. Tom Chapin went out ov his home but kame bak in er fu minits an sed: "Dad, I seen mor'n er hundred squerils out here." "No, yer didunt, Tom, thair aint so meny round here." "Waul, I saw fifty enway."

"No, yer didunt, Tom. What maks you tel such storiz?" "Waul, at eny rate I saw two, wun chasin tuther on the wall." This waz an expanded statmunt du tu Tom's indy ruber imaginashun.

Ther wuz sevrul ole fishermen swapin fish storiz, when Hop-tu-Die-if-Taint-So told the followin: "I went fishin wune in er pond what thar waz nuthin but trout. I noticed er long string ov trout swimmin near the bank, an ech wun waz holdin onto the tale ov the uther. Waul, I droped mi bated hook in an the fast wun in the line grabed it. I hooked him, then I put my pole ovur mi sholder an ran bak er mile when I felt suthin giv way an I stopt. I lade mi pole down an fooled that line of fish bak tu the pond, an thar waz 1700 ov them and they weighed just two pounds apiece." This elongated truth waz deliberately told (az ov them ar) tu make pepul sit up an take notis. Yu hev seen them no dout in patut medesun ads an testimonies published in sekuilar an religius weekliz, az wel az Sunday Skule quarterliz. Way bak when the world waz er baby the Father ov Lize told Eve she shudnt die if she did take ov the forbidden froot, an we lurn frum theze ads that he is stil doing bizniz. With the aid ov publishure an editure an uthers he is doin er mity big bizniz, speshully in patut medesun ads an testimonios. We hope that these pepul who ar doin bizniz with him on these lines wil mak sumthin outo v it fur when the Great Day ov reckonin kums the Book sez that "All liars shall have their part in the lake which burneth with fire and brimstone."

Profit on Suit of Clothes.

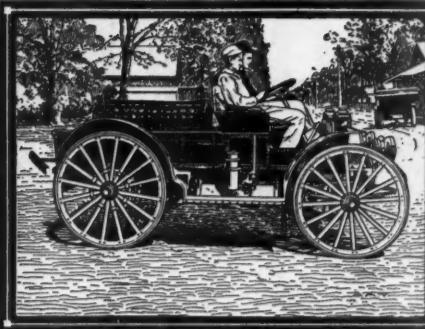
The farmer receives for the wool in a suit of clothes, \$2.23, and his profit is 68 cents; the manufacturer of cloth receives for his product \$4.78 and his profit is 23 cents; the wholesale clothing dealer receives for his product \$16.50 and his profit is \$2.18; the retail clothing dealer receives \$23 and his profit is \$7.50. This means a total profit of \$10.59 that men must pay on a suit of clothes costing \$23. The actual cost of the suit is about half what it costs you who buy and wear it, but even then the clothing is cheaper than you could make it yourself from the wool of your own sheep.

No Criterion.  
Judge.

Tommy—I don't think aunty will stay; she didn't bring her trunk.

Johnny—Huh! Look how long the baby has stayed, and he didn't bring anything.

QUICKER TRIPS MEAN MORE TRIPS AND BIGGER PROFITS



WITH an International Auto Wagon you can make a trip in one-third the time that you can with a team. You can catch the early trains or boats and the early markets. You can go to whatever market pays you best—10, 15, or 20 miles is practically nothing for an International. And you can keep your horses working in the field. The

International Auto Wagon

is always ready, winter and summer, 24 hours a day if necessary. Roads, hills, sand, or weather do not stall it—it never tires.

The wheels are sufficiently high to give abundant road clearance. The solid rubber tires eliminate tire troubles and expense. There are no delays or expense on account of punctures and blow-outs. The air-cooled engine does not freeze in winter. The International Auto Wagon will give you more service than you could secure in any other way for the amount invested. Whenever desired, it can be converted into a pleasure vehicle by adding an extra seat and top.

There are many International Auto Wagons in the hands of farmers and fruit-growers all over the country. Let us send you facts and figures showing what they are doing. Write for catalogue and full information.

International Harvester Company of America  
109 Harvester Bldg. (Incorporated) Chicago U.S.A.



When you write advertisers Please mention Green's Fruit Grower.

I'll Send You This "Cant-Sag" Gate



Without a Penny of Pay in Advance Send no money—just send for my Free Catalog and pick out the gates you want. Use them 30 days. If you don't find Can't Sag Gates the best you ever saw at any price, I'll take them back and pay the freight both ways.

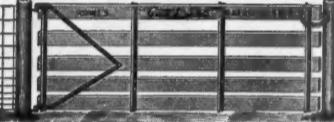
Costs Less Than Wood—Lasts Three Times as Long

Cost only one-third as much as iron, pipe, or wire gates, and even less than home made all wood gates. They can't sag, drag, warp or twist. Made with either 4 or 6 inch boards, double bolted between 8 angle steel uprights—not screwed or nailed. No nails to gather rust or pull out—no wood joints to collect water and rot.

Guaranteed 5 Years Freight Prepaid

I furnish Complete Gates ready to hang, or the Gate Steel, hinges, bolts, etc.—everything but the boards. You can put up your own Can't Sag Gates if you wish and save money. Postal brings catalog. Send for it today. Alvin V. Rowe, Gen'l Mgr.

Can be furnished with elevating attachment



This Picture  
In 14 Colors,  
To Hang  
In Your  
Home



FREE  
BEAUTIFUL PAINTING  
OF DAN PATCH

Reproduced on Extra Heavy, Fine Enamel Stock and in 14 Perfectly Blended Colors and Shadings by the Marvelous, Newly Invented "Original Colors" Process. Size of picture I will send you is 21 x 26 inches, making a Splendid Picture to Hang in any Home or Office as it is Absolutely Free of any Advertising. It will be mailed, postage paid, in an Extra Heavy Mailing Tube to insure safe delivery.

Free for Stockowners, Postage Prepaid

This Splendid Painting of Dan Patch is made from life and I want to assure you that it is as Natural and Lifelike as if Dan stood right before you, in his Present Splendid Physical Condition.

This is an Elegant Picture for hanging in the Finest Home or Office. It is an exact and perfect Color Reproduction of the Best Painting ever made of the Sensational and Famous Champion Stallion, Dan Patch 1:55.

I think so much of this painting that I had it reproduced in a Beautiful Stained Art Glass Window in my Country Home. This picture will be a pleasure for you as long as you live. I show Dan in true position of his life, his lovely disposition, natural as life. You cannot buy a Picture like this because I Own The Painting and have reserved it exclusively for this use. Would you like the Finest 14 Color, Horse Picture ever published in the world of the Fastest Harness Horse in all Horse History? People are Perfectly Delighted with this Splendid Painting and constantly writing me, from all parts of the country, that it is the Best they have ever seen and thousands of them are hanging in Fine Homes and Offices. A Splendid, 14 Color Reproduction of Above Painting mailed Absolutely Free, To Farmers or Stock-raisers OVER 21 YEARS OF AGE. If you own Stock and Answer These Two Questions, I'll send the Painting and a Special Stock and Poultry Feeding Book. Dan Patch is the Great World Champion of all Champions that have ever lived. He Also Has 42 in Official Speed List.

Dan Patch is the Great World Champion of all Champions that have ever lived. He Also Has 42 in Official Speed List.

ANSWER TWO QUESTIONS FOR THIS SPLENDID PICTURE. I DO NOT BELIEVE YOU WOULD TAKE \$10.00 for the Picture I will send you. If you could not secure another copy, Write me at once and ANSWER QUESTIONS and the Beautiful Picture is yours FREE. Over Two Million Farmers and Stockowners have written me for a Dan Patch Picture. Address,

M. W. SAVAGE - MINNEAPOLIS, MINN.  
OR, INTERNATIONAL STOCK FOOD CO., Minneapolis

FREE  
In 14 Colors

Do You Expect To See The Day When These Wonderful Dan Patch Records Will Be Equalled?

Dan Patch 1:55

1 Mile in	1:55
2 Miles in	1:56
14 Miles Averaging	1:56%
30 Miles Averaging	1:57%
45 Miles Averaging	1:58
73 Miles Averaging	1:59%
120 Miles Averaging	2:02%

Dan Has Broken World Records 14 Times, Dan is also Leading 2:10 Sire of the World for his age. Sire of "Dazzle Patch" the Greatest Speed Marvel of the World's History, which paced a half mile in fifty-nine seconds, or one-eighth of a mile in thirty-nine seconds. A 1:14 Gait. Dan is only 25 months old in 1911. Also Pearl Patch 4 year old 2:04. Sons of Dan's Colts will be Champion Trotters as well as Pacers. Why not Raise or Buy One?



## Health Maxims.

"To train the mind and neglect the body is to produce a cripple."—Plato.  
"Every one should relax and be a holy vegetable occasionally."—Sidney Smith.

"To cure was the voice of the past, to prevent is the divine whisper of to-day."—Kate Douglas Wiggin.

"The gymnastic that makes you hold your head up tends to straighten your moral behavior."—Edward Howard Griggs.

"In any man or woman, a clean, strong well-fibered body is more beautiful than the most beautiful face."—Walt Whitman.

"The best cough syrup ever prescribed for weak lungs is a ten minutes' practice of deep breathing."—Beardsley.

Don't be afraid of fresh air. Take into your lungs all you can at all times and you will be happier—also your days will be longer in the land. Winter will bring with it increased danger from pneumonia through bad air. Fear of cold leads to over-heated rooms and in these rooms death lurks. A warning by the Chicago Board of Health is timely and deserving of consideration. It says: "In home, store and factory people are not getting so much good, safe air as they have been getting during all the summer months, says the bulletin. Pneumonia is specified as a dirty air disease, caused by dry and overheated air. Most people keep their homes too warm, as a rule above 70 degrees rather than below. Experts on ventilation and room temperature tell us that a temperature of 68 for people that are properly clad, and who are in good health, is far better than a higher temperature, say 70 or above. Another important matter is humidity. Most indoor air is too dry, as well as too warm. Especially is this true during the cold weather season. It is a good plan for those who live in flats or steam-heated



A branch of Burbank plums, one of the popular Japanese varieties. This is the way many plum trees have of overbearing, but it is not the way that plums should be grown. More than half of these plums should have been removed when they were about the size of grapes or later. I have known fruit growers to allow the plums to nearly mature crowded together as they are on this branch. When well colored about half the fruit was picked and marketed and the remainder was left to grow to larger size and bring a higher price in the market. When picked before fully ripe the Burbank plum may be shipped almost like potatoes and will keep a long time.

A stomach specialist is quoted as saying that two or three slices of very ripe pineapple eaten after dinner is better than any so-called "digestive" known. The fruit should be very ripe, fresh and uncooked.

Some startling figures about germs which the toothbrush helps to get rid of are given by E. C. Bonsfield in the Lancet. He states that he has found the mouth on waking in the morning to contain about 3,000,000,000 bacteria capable of being removed by a five-fold rinsing with 25 cubic centimeters of water each time. After ordinary washing of the teeth with a hard tooth brush, about one-fourth the number could still be rinsed away. After using tooth paste only 120,000,000 were left.

Pneumonia.—Hot onions, according to a French physician, are said to be a sure cure for pneumonia. The remedy is as follows: Take six or ten onions, according to size, and chop fine; put in a large pan over a fire, then add the same quantity of rye meal and vinegar enough to make a thick paste. In the meantime stir thoroughly, letting it simmer for five or ten minutes. Then put in a cotton bag large enough to cover the lungs and apply to the chest as hot as patient can bear. In about ten minutes apply another, and thus continue by reheating the poultice and in a few minutes the patient will be out of danger. This simple remedy has never failed to cure this too-often fatal malady. And it is quite as effective as that of the old Summit county doctor who was in the habit of always slapping onto the patient's chest a handful of croton oil and rubbing it in briskly. In thirty minutes the patient was out of danger and the old Doc never lost a case.—Farm and Field.

apartments to have evaporating vessels allotted to the radiators and kept filled with water. In houses heated with hot air furnaces the evaporating pan in the furnace should be kept filled." And the superintendent of the Board of Health of Hartford, Conn., profers advice on this subject. He says, "Throw open the windows at night and breathe plenty of fresh air." This doctor declares that health charts have shown an ascending ratio in deaths from pneumonia for several winters, and to guard against the dread disease people should have all the fresh air they can while sleeping.

A clean, carefully pruned orchard is a joy.

If an orchard is on the decline, it is an indication that the food supply in the soil is being exhausted. Fertilizers should be applied and thorough cultivation given.

## VIRGINIA·APPLE·ORCHARDS

PAY BIG PROFITS



\$350.00 on long time and easy payments buys a ten-acre Apple Orchard tract in "The Beautiful Shenandoah Valley of Virginia." The orchard is 100% bearing and produces 1000 bushels per acre and up. Write now for last issue of "The Southern Homeseeker," other interesting literature and low excursion rates. Address, F. H. LaBeaume, Ag'l Agt., Norfolk & Western Ry., Box 3946, Roanoke, Va.



## WANTED!

I want 10 men or more in every township to write me quick for a special offer on the sized engine they need. When you get this offer you'll buy. I make it practically irresistible. Then everybody in your neighborhood will know the truth about Galloway—his quality and savings—and all will understand the foolish tales the dealer tells in order to get his big price and personal profit.

## 10 OR MORE MEN

Write Now to Galloway

You'll soon see the reason for the really funny things that dealers say of Galloway—Galloway has no factory—"Galloway's pretty near broke"—Galloway's stuff is poor quality—those are only of their stories. But I'm going to call their bluff and make sure prices to 10 or more men to 100 or more men will be all the order of the day when the dealers' "jokes" in their true light. In the meantime I'm getting hundreds of letters like this: A. L. Westphal, St. Francis, Minn., writes: Last winter I investigated 5 or 6 different engines on the market, but I bought the Galloway and I am very well satisfied with it. I have saved at least \$100.00 on it.

Write quick for Big Engine Catalog and special prices. I'll also send my fine new General Line Catalog in five colors.

W.M. GALLOWAY, President

THE WM. GALLOWAY CO., 885 A J Galloway Station, WATERLOO, IA.



## PUMPS

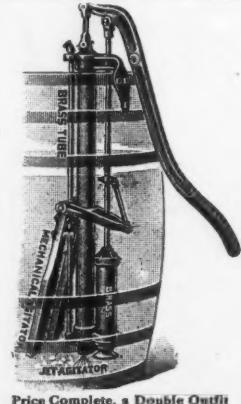
**A Bucket Pump:** Here is a handy bucket pump. It costs \$3.75 complete as shown in the illustration. If you want a 4 foot extension pipe to hitch on to the rubber hose, it will cost you 35 cents extra. If you want a brass stop-cock on your pump it will cost 50 cents more. By having a stop-cock on your pump you can turn off the spray when the pressure is on and save your spray mixture while moving from one place to another. So we advise you to order one on the pump you buy. Now with all these extras on the pump it will cost you \$4.62. You will notice if you look at this pump carefully that when the bottom of the pump rests in the pail of solution there is a place to put your foot on the pump, which will enable you to hold the pump in position when using it. This pump has an agitator. This keeps the spray mixture stirred up. Then there is a Vermorel nozzle that will throw a fine spray or a solid stream. This pump is all brass except the foot rest and handle, and will do its work well. Remember the complete pump with all extras is \$4.62. Will it not pay you to order one of these Brass Bucket Pumps now? This price is net.

**A Bucket or Half-Barrel Pump:** When you receive this pump and want to use it in a small barrel or in a half-barrel, be sure to select a barrel that is water tight. Attach this pump by using a couple of good strong bolts to the barrel. If you use this pump in a barrel you will have to take off the foot rest. This can be done very easily by unscrewing one nut. The price of this pump is \$4.45. It has an agitator to keep the mixture stirred up. It has 5 feet of 3 ply hose and a Vermorel nozzle that will throw a fine or coarse spray. If you want an 8 foot extension pipe to attach to the five foot hose, so you can spray high trees easily, it will cost 53 cents more, that is this pump with extras costs \$4.98. This pump is all brass except the foot rest and handle. The above illustration shows you just how it looks. Will it not pay you to send in your order and become the owner of one of these pumps? Remember the complete Half-Barrel Pump will cost you \$4.98.

The prices quoted here are net. Do not write for a lower price, we have none.



Half-Barrel or Bucket Pump. Price \$4.45 Complete \$4.98



Price Complete, a Double Outfit For \$16.00

**A Powerful Barrel Pump:** Look at the illustration. It shows you how the barrel pump will look when you have placed it in the barrel. A good kerosene barrel will do. You will have to cut a hole in the top of the barrel large enough (on one side of the top) to get the pump into the barrel. Then bolt it securely to the side of the barrel. (You will notice the three bolts in the illustration.) When you want to move from tree to tree, place the barrel with the mixture in it on a stone-boat and hitch your horse or mule to the stone-boat, and you have an outfit that will spray a large orchard. You will notice the agitator at the bottom of the pump in the illustration:—This works up and down when you pump, and keeps the mixture stirred up. Let us receive your order for one of these pumps.

Price No. 5, complete with Mechanical Agitator, 5 feet of three-ply discharge hose and nozzle ready for use. Weight 30 lbs. and 8 feet Extension Pipe for higher trees \$ 8.60

Price No. 6, complete with Mechanical Agitator, two 5-ft. lengths of three-ply discharge hose and two nozzles for spraying two rows at one time, ready for use, weight 40 lbs. and 28-ft Extension Pipes for higher trees ..... 10.00

**Green's Nursery Company**  
**Implement Dept.**

JUDICIOUS SPRAYING IS AN EFFECTIVE FRUIT INSURANCE

P-W-R **LEAD ARSENATE** P-W-R

SUPPLIED BY WHOLESALE DRUGGISTS AND DEALERS THROUGHOUT THE UNITED STATES

POWERS-WEIGHTMAN-ROSENGARTEN CO.

Manufacturing Chemists

Founded 1818

NEW YORK

PHILADELPHIA

SAINT LOUIS

**AIR AND THE SOIL.**  
Don't Overlook the Needs of the Soil  
in Humus and Fertilizer.

Nature tries to make soil, and this is what we will have to help her to do if we are to be prosperous planters. Soil is by no means a "fixed quantity," as one of our recent text books tells us; on the contrary, soil elements are constantly being turned into soil, and soil turned back into its elements—out of reach of us. In summer nature weaves an immense quantity of foliage out of the air mostly and then in the autumn throws tons of leaves down upon the earth to make, first, humus, and then soil, says the Florida Homesucker.

Frogs burn leaves and weeds, leaving for themselves a pinch of poor ash, sending back into the air what was taken from it by the process of growth. These thousands of tons of leaves are not made out of the earth, but out of the air and are intended to be turned over into soil. If you plant a tree in a tub of dirt and leave it there until it weighs one hundred pounds, you will find by weighing the dirt that the tree was not made up of what was in the tub, but almost altogether of what it could get from the air—carbon and nitrogen for the most part, with hydrogen composing a good share of the liquid part of the sap.

Agriculture should be renamed aericulture, because we are really taking from the air the larger part of our annual crops. What we must know is how to do this the most readily. Our fathers knew that they must use manure and they knew that they must rotate crops. They knew also that living plants feed on decaying plants, this having first served as food for animals. They did not know, however, that there was one class of plants that could take food directly from the air, using it at once for plant growth and then transforming it to soil.

It was only recently discovered that all leguminous plants like clovers, alfalfa, beans, peas, and beggar weed had been doing this very work. Meanwhile the other side of the question has been exploited; that is if we grow nitrogen-producing or leguminous plants altogether while adding to the nitrogen, they will have the potash and phosphorous.

This gives the problem over to commercial fertilizers, which furnish the material that is lacking in the form of nitrates and muriates. Much of this serves, however, only as a whip to a tired horse; nothing is added to the soil, but it is goaded to give out whatever life it contains.

It is now found that there is a very marked limit to the value of even honest fertilizers. Their work rarely reaches beyond the season of their application.

Commercial fertilizers are certainly important, if understood and used under limitations, or we should say with additions. They supply some foods, but practically no organic matter, and the tendency is down and out. They are for good soil and not for poor soil.

If we were growing a bed of fancy strawberries, for instance, we would use a liberal supply of muriate of potash and acid phosphate, but we should consider cottonseed meal more important as a real food; and then we would by no means omit a thorough preparation of the soil with compost and a mulch.

After all the barn yard and t ash pile gives us our best fertilizing material when supplementing legumes. Every stable should be provided with a concrete trough to carry every ounce of liquid to a concrete tank. It is one of the best fertilizers, in the best form for plant food. The Chinese gardener uses no other.

Belgium and France have the wealthiest communities of farmers known to the world. They practice intensive farming, rarely planting more than ten acres and do not fail to use every ounce of fertilizer procurable from their farms, having over a year or two old compost bin, as a savings bank account, so to speak.

**One Safe Investment—A Farm.**

Hon. Miles Poindexter, United States senator from the State of Washington, says that the desire for land is insatiable; that it is inherent in the great race which has principally settled and given form and character to our nation. Homes upon the land are a social and economic necessity, and by the cruel law of supply and demand the need for land has been intensified, and is being intensified a thousand-fold, while the supply has been correspondingly exhausted.

Mr. Poindexter's observations are true, and should be heeded by those who have no homes, and they should bestir themselves to get a piece of land upon which to make a home while the prices of lands are yet within the reach of the comparatively poor.

**Cold Storage.**—He—"Where is the live chicken I bought for our party?"  
She—"I put it in our new ice-box, to keep it fresh until it is killed to-morrow."  
—Meggedorfer Blaetter.

# EARN \$50

## When You Buy a Manure Spreader

Fred Hansen of Tremonton, Utah, writes: My neighbor borrowed my Galloway spreader to try against his neighbor's new spreader which cost \$50 more, but his neighbor's spreader did not save him any money. I'll tell you why. Get your spreader direct from Galloway's Great factory at factory price and make the middlemen's commission yourself. No easier way to make money—no such sure way of getting quality. I'll quote you a price \$50 below the dealer, according to quality, style and capacity. I'll give you a free trial, a binding personally signed guarantee, longer and stronger than anybody. **Prices From \$39.50 Up.**

**GALLOWAY**  
Is saving hundreds of thousands of dollars for his customers every year—the proof is yours for seeing. Why not save your money and see on one of these Great Galloway Spreaders No. 5 with Mandt's New Gear. No spreader at any price anywhere can touch it. Write for Free Catalog at once and the prices that make doing business foolishness about Galloway. You'll also get Galloway's new Book—"A Streak of Gold"—most valuable book on manure published.

**Wm. Galloway, Pres., THE WM. GALLOWAY COMPANY**  
869A1 Galloway Station Waterloo, Iowa

**Mail Postal Now**



**TREE TANGLEFOOT**, a harmless sticky substance applied directly to tree trunks. Remains effective rain or shine three months and longer, fully exposed to weather. One pound makes about 9 linear feet of band. No apparatus required, easily applied with wooden paddle. Especially recommended against gypsy, brown-tail and tussock moth caterpillars, bag worms, canker worms and climbing cut worms, but equally effective against any climbing pest. Tree Tanglefoot needs no mixing. It is always ready for use. Do not wait until you see the insects. Band your trees early and get best results.

Price: 1-lb. cans, 30c; 3-lb. cans, 85c; 10-lb. cans, \$2.65; 20-lb. cans, \$4.80.

**The O. & W. THUM COMPANY, Grand Rapids, Mich.**  
Manufacturers of Tanglefoot Fly Paper and Tree Tanglefoot. Send for Booklet.

**Get  
My  
Price**  
I will save  
you money



**Fully Guaranteed  
30 Days' Trial**

# GALLOWAY POWER SPRAYER

**CONSTRUCTION**

These outfits are built throughout of the best material that money can buy, and do not have an equal for power, durability and efficiency. Both engine and pump are bolted to the platform, and the pump is driven with sprocket wheels and chain. This arrangement does away with the heavy gearing necessary for a pump jack, and avoids the necessity of a rigid base to keep the gears in alignment. There are no gears, connecting rods, etc., to waste time, take up room and cause trouble, especially if you decide to take the engine off and use it for any other work. You can use the engine right on the outfit or you can unbolt it in a few minutes and take it off without interfering with the pump in any way.

We use regular Galloway engines and you can have them at your service for running cream separators, corn shellers, pumps, washing machines, or any other machinery about the place which does not require more than the rated capacity of the engine. A lever attached to a clutch on the pulley shaft permits the operator to stand on the deck and stop or start the pump without stopping the engine. This is a convenient arrangement when you are in the orchard and wish to go from the tree to another or one part of the orchard to another.

WE have long been setting the pace for engine manufacturers. We propose now to start a lively clip for power sprayer manufacturers, therefore it would not be fair to give you the price here because we want you to consider the proposition fully and you might wonder how a power sprayer of absolute first quality, guaranteed in every way that an experienced orchardist could ask could be sold at the price we are making on our new Galloway Power Sprayer.

Simplest engine built. The famous Galloway—time tried and tested.

We made our first sprayers more than a year ago. Have given them the fullest possible trial and we present them now to the fruit growers of America, knowing that we have the machine that will deliver the goods.

There are several new automatic features; there is an abundance of power; there is utter simplicity; there is durability; there is quality all the way through.

Don't simply send us your name. Write us fully what your spraying needs are. We will give you a good answer and we are mighty likely to quote you for the entire sprayer what you are accustomed to think of paying for the engine alone.

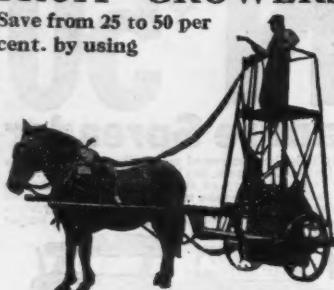
Remember, this sprayer carries all the Galloway guarantee of quality. It's sold on the satisfaction or no pay plan.

Write us fully today. It will mean a big saving to you.

**THE WM. GALLOWAY COMPANY, 860 Galloway Sta., WATERLOO, IOWA**

## FRUIT GROWERS

Save from 25 to 50 per cent. by using



## THE BERGER PATENT SPRAYER

Worth 3 to 1 of all Others.

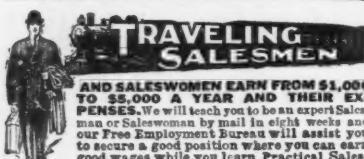
A Money Saving Investment. Requires but one man to operate—Drive, Pump, Spray. Most economical sprayer made.

Tank capacity, 100 gallons. Steel tower, 8 feet high. Will carry 3 to 4 men. Easily hauled by 1 horse. Tower readily removed, leaving wagon for other uses.

Sprays high or low trees and reaches the spot. No waste. As effective as the 2 or 3 horse power kind, at quarter the cost of operation. No engine to get out of order. No repair expense. Will last half a lifetime.

The Berger Sprayer can be used to advantage in large or small orchards and will help to make fruit-growing profitable. You can do it with our outfit. Think it over. Write for circular F.D. One price to all.

THE BALTIMORE COMPANY.  
Manufacturers Tanks, Towers, Silos, Sprayers, Barrels.  
BALTIMORE, MD.



## TRAVELING SALESMEN

AND SALESMEN EARN FROM \$1,000 TO \$5,000 A YEAR AND THEIR EXPENSES. We will teach you to be an expert Salesman or Saleswoman by mail in eight weeks and our Free Employment Bureau will assist you to secure a good position. Write for your good wages and you learn Practical Salesmanship. We cannot begin to supply the demand for our students. If you want to enter the best paid, most independent profession in the world, write today for our handsome free catalog, "A Knight of the Grip," also testimonial letters from hundreds of students we have received in the past, list of additional men and full particulars of the special offer we are now making new students. Address our nearest office, 151.

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Aunt Hanna's  
Replies

## An Unhappy Marriage.

A subscriber to Green's Fruit Grower writes me saying that the first article she reads on receiving her paper is Aunt Hanna's replies. She is in serious trouble and asks advice. She has married a man ten years younger than herself. When he proposed marriage she objected on account of her age, but he insisted that her being a little older was no serious objection, hence they were married. She had property of her own, of which after marriage the husband secured control. After ten years of happy married life the husband became interested in another woman, after which he spent but little of his time at home. Now the husband has left his wife altogether and her troubles are great. She has not only lost her husband, but has lost her property or at least she fears she has lost it.

Aunt Hanna's Reply: It is well that we do not know as individuals of all the troubles, of all the diseases, of all the human suffering going on continually in the world around us, for if we did have knowledge of all these troubles, living would no longer be a pleasure. While there is much trouble between married people, and many separations or unfaithfulness, dissipation, fraud or crime, there are far more happy marriages than unhappy ones. We do not hear of the happy marriages, but the papers publish full accounts of many marriages which are a failure and where divorces are sought or obtained.

There are many fickle and vicious married men and the same is true of married women. These inconstant or vicious people in most instances cannot be changed or transformed into decent people who desire to do the right thing. If a woman has had the misfortune to marry an unprincipled man I do not see how I or any other person can by advice give such an unfortunate wife much assistance. It would seem to be useless to appeal to such a husband as this correspondent has, to do better, or to treat his wife better. He knows he is doing wrong. He is simply a degenerate, a man who does not act from principle but from impulse. While I would encourage the wife to be as lenient as possible, and to be willing to take back this man in case he should indicate a change of life for the better, the probability is that the sooner she dismisses him from her mind, and decides to get along through life without him, the better for her. It might be well for the wife to consult a lawyer or some shrewd business man and learn whether it is possible for her to get back that portion of her estate which is now in her husband's keeping. So long as there is no divorce, in case of the husband's death, in the absence of a will to the contrary, she would be entitled to an interest in his estate. He cannot sell his real estate without her signature to the deed and give a good title, therefore it would not be policy for her to seek a divorce.

Here is a warning for young girls. They should be cautioned about marrying without first learning about the character or principles of the proposed husband. How few girls there are who make investigations of character or principle or business ability of the man a desire to marry. Most girls are influenced by the personal appearance, magnetism or talkativeness of the man who proposes to marry them rather than to investigate or be interested in deeper problems connected with the man's present or future life.

Wives should not place their private estates in the hands of their husbands, nor should fathers or mothers place their estate or money in the hands of their children before their death. The husband has no claim upon the private estate of the wife, and if he demands it before or after marriage, here is an indication that there is something wrong with the man which should arouse the suspicions of the wife, and if his family relations can only be sustained by giving him control of the wife's property or money, perhaps the wife leaves her the better, for here is an indication that he married her simply for her money.

People should be careful about signing papers. I hear of a case where a father left his daughters a large estate and one of the daughters had married a lawyer, an agreeable, attractive and cultured man. On the death of the father they asked this lawyer to take charge of their property. He required the power of attorney, which gave him control of the entire estate. After he had turned the estate into money he left for parts unknown and was never seen again, taking with him every dollar that had been left to the daughters.

Pyrox fills the barrel with the apples that used to go on top. Write Bowker Insecticide Co., Boston, for book.

## About Iron Filings for Trees.

Editor Green:—In reply to E. F. S., page 2, Dec. Green's Fruit Grower, I will say that I have thirty seckel pear trees about 50 years old which bear regularly. About 30 years ago a large quantity of iron filings from the Farmer's Favorite Drill Works at Macedon were hauled and scattered around these trees.

As a comparison, I have two neighbors each with a few seckel pear trees which were never treated with iron filings and I find that their trees bear more and better fruit than do my treated trees.

While I have no positive proof that the iron filings were detrimental to the trees yet if I had other pear trees and could have them treated with iron filings free from cost, I would not let the job be done. A. B. Katkamier, Macedon, N. Y.—Dec. 14, 1911.

C. A. Green's Reply: Prof. Van Deeman, our Associate Editor, has said that he does not consider iron filings or any other form of waste iron as of any help in fertilizing the soil about fruit trees. He does not consider that these scraps of iron are desirable as a fertilizer, and yet it is possible that these filings when placed on the surface of the ground over the roots of fruit trees may act as a mulch and in that way be of some slight benefit. Possibly the iron filings might have the effect of keeping the soil loose and friable and in that way be helpful. I have had no experience with iron filings as applied to the soil. I would not think that they would be objectionable. I cannot see how they would do any harm.

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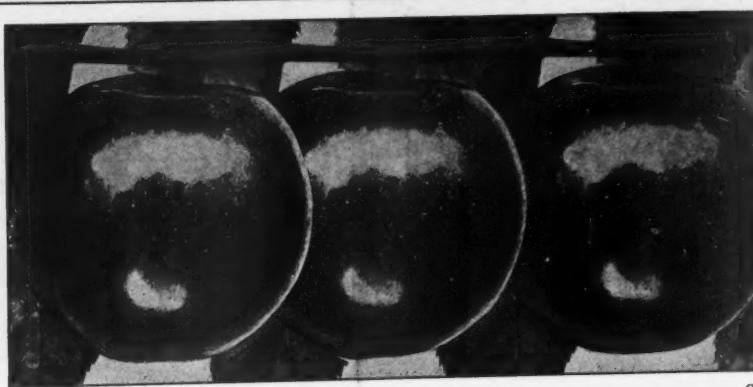
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For years we have recommended the planting of two year old apple trees. We advise you to plant two year old apple trees now. From experience we have learned that two year apple trees winter the northern climate better when transplanted. And that very few orchardists have learned how to properly head back one year apple trees. It is necessary for the orchardist to head back the one year apple tree which he buys. Experts in our nursery head back the one year trees for you at the proper time and do it right. These one year trees are then allowed to grow another year before being sent to you. When you get the apple trees they are two years old and are all well rooted and well branched.

This year we have grown the most perfect, clean blocks of trees we have ever seen.

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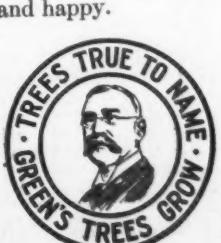
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Thousands of satisfied planters of Green's trees all over this country prove that the work of these men has been well done and that Green's trees are good trees. And Green's trees are good trees. With ordinarily good care they will thrive and produce good fruit. And they are sold at prices no higher than any planter must expect to pay for a good productive tree true to name.

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**\$835** Our price for the material to build this house.



**HOUSE DESIGN No. 130**  
Size, 25 ft. 10 in. x 29 ft. 6 in.; eight rooms and bath, pantry, vestibule and large hall. A square, solid, substantial construction. All space is advantageously utilized. The Colonial windows and porch columns are distinctive features. Convenience and artistic arrangement, general elegance of appearance, and low price, this house is unequalled.

**CHICAGO HOUSE WRECKING COMPANY**  
**THE GREAT PRICE WRECKER.**

We buy supplies at Sheriff's, Receivers', and Factory Sales, besides owning outright saw mills and lumber yards. Usually when you buy your building material elsewhere for the competitor buildings shown in this advertisement, it costs you from 50 to 60% more. By our "direct to you" methods, we eliminate several中间men's profits.

Every stick of lumber and every bit of building material offered in this advertisement is guaranteed brand new and first class, as good as you can purchase from anyone anywhere.

You run no risk in dealing with us. Our capital stock and surplus is over \$1,500,000.00.

years of honest dealing guarantees absolute satisfaction. Any material not up to our representation may be returned at our freight expense both ways and money refunded in full.

Our wonderful spring building offer sets a new pace in the building world. Never before have such remarkably low prices been published.

Our stock includes practically every manufactured article. Besides building material we have a complete stock of Dry Goods, Clothing, Boots and Shoes, Furniture, Household Goods, Groceries—in fact everything needed in the home, on the field or in the workshop.

**Our price for the material to build this barn.**

**\$580**



**OUR JOIST FRAME BARN No. 222**

Size, 36 ft. by 48 ft. Height to top of roof, 38 ft. 6 in. The most practical and serviceable barn ever designed. No heavy timber in the entire structure. Self-supporting roof. No joists in hay-loft. This design represents strength, rigidity, economy of construction, and is absolutely dependable and substantial. Write us for more complete information.

**Our price for the material to build this barn.**

**\$620**

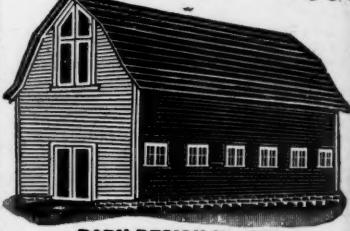


**OUR "STAR" BARN DESIGN No. 270**

Size, 53 ft. wide by 80 ft. long, 24 ft. to comb. An ideal barn for farmers raising stock on a moderate scale; balloon type. The hay-mow extends to the ground floor and above the grain rooms on each end of the barn. Cattle stalls on one side of the hay-mow; horse stalls on the other. Excellently ventilated in every part. A practical barn well built of guaranteed first-class material, and will give excellent, all-around satisfaction.

**Our price for the material to build this barn.**

**\$639**

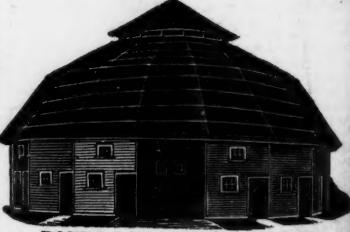


**BARN DESIGN No. 250**

Size, 30 ft. wide and 60 ft. long, 18 ft. to top of the plate. A barn arranged exclusively for horses. Has 12 single stalls, 5 ft. each, and 6 double stalls, 10 ft. each. Ten foot driveway. Can also be used as a horse and a cattle barn and will accommodate 12 horses and 18 head of cattle. A building of brand new high grade materials, dependable construction, sanitary and generally convenient throughout.

**Our price for the material to build this barn.**

**\$955**



**ROUND BARN DESIGN No. 206**

Size, 60 ft. in diameter and 18 ft. high to plate. Has 14 sides, each side 14 ft. A 16 ft. Silo in the middle, same being 36 ft. high and will hold 160 tons of silage. Hay capacity, 65 tons. Will accommodate 100 head of cattle. The many and excellent features offered by this construction, the high grade materials furnished by us, and our extremely low price makes this a barn bargain worthy of thorough investigation.

**CORRUGATED ROOFING**  
**Per Square \$1.25**

**Roofing Price**

**Smoothed** Metal roofing is superior to all other coverings. A fact proven absolutely and conclusively of 100 years' of actual experience. We carry a complete stock of all styles.

Here is a roofing offer that has never before been equalled. We have 5,000 squares of Corrugated Iron Roofing sheets all 22x24x1 1/2 in. corrugation. Strictly new first-class that we offer at \$1.25 per square. Free on Board Cars at Chicago. At this price we do not pay the freight, but if you will write us for our Great Roofing Offer, we will make you Freight Prepaid Prices lower than ever offered in the history of roofing material.

Our stock includes painted and galvanized. We can furnish it in flat, corrugated, standing seam, "V" crimped, brick siding, beaded ceiling and in ornamental fancy ceiling. In fact we can furnish you every way in the covering line.

A hammer is the only tool needed in putting up all grades but the standing seam. We give you free with every order for 3 squares or more a handsome serviceable crucible steel hammer that ordinarily retails from 75c to \$1.00. Write today for our Great Complete Roofing Catalog, and our latest Roofing quotations.

**"PREMIER" HOUSE PAINT**  
**Per Gallon \$1.08**

Mr. V. Michaelson, Supt. of our Great Paint Dept., is probably the best known paint man in the world. His picture has appeared on millions of gallons of cans. He is our guarantee of quality. Our Ready Mixed "Premier" Brand of Paints are made under a special formula and will give the best service and satisfaction. Our prices range from \$1.08 to \$1.31, depending upon quantity.

Our "Premier" Barn Paint is an ideal protection for barns, roofs, fences, outhouses and all general purposes. This is a paint in which Mr. Michaelson has put all his personality. Comes in green, maroon, yellow, lead, red and slate.

In 1 gallon cans, per gallon... 82c

In 25 gallon cans, (1/2 barrel), per gallon... 72c

Write to-day for our Great Color Card and prices.

**\$37.50 BUYS COMPLETE BATHROOM OUTFIT**

Here is an outfit that is good enough for any home. It is strictly A No. 1 and first-class in every particular. The bathtub and lavatory are white porcelain enameled over front. The closet is a siphon acting low down outfit.

It is our lot No. 5-AD-33.

Our handsome Plumbing Catalog lists many other outfitts ranging in prices from \$26.30 to \$92.50.

We will furnish all the Plumbing material needed for any of the houses shown in this advertisement, including one of the bathroom outfitts described above, besides a one piece roll rim drain board, a kitchen sink, with white enameled drain board, a 30 gallon range boiler and all the necessary pipe and fittings, and all material of every kind to complete the entire plumbing system, including all fixtures, furnished with iron pipe connections for the sum of... \$83.95

**WALL BOARD** Our Magic Wall Board is positively the best on the market. This is the Wall Board that has a backing of regular 4 ft. lat and Asphalt Mastic, the face side of which is heavy card board, properly sized, ready for calcimining, paint or wallpaper. It comes in sheets four feet square. Write us what space you wish to cover and we will send you descriptive circular and name you delivered prices. Be sure to mention Mastic Wall Board M-W-22.

Price per square... \$2.50

**PLAN BOOK**

Upwards of 100 medium price houses, barns and other designs shown. Each design represents beauty, utility, substantial construction and the lowest possible price.

**ROOFING BOOK**

This book explains all about metal roofing and all other styles. Tells how to apply same in the most economical and satisfactory manner. Quoted lowest prices on highest class material. Sent Free.

**BUILDING MATERIAL BOOK**

The greatest book on Building Houses ever sent free. Tells all about our wonderful stock of Lumber, Sash, Doors, Roofing, Hardware, Plumbing, and Heating. Write For It Today.

**PLUMBING BOOK**

A complete education in plumbing so you can equip any building of any style or size and save at least 50%.

**HEATING BOOK**

Hot water, steam and hot air heating fully described. This Book is Free.

**PAINT BOOK**

A book showing actual colors, 40 shades to select from. Informs you fully regarding application to get lasting results. Every quotation a saving of from 30% to 50% Tell all about painting and painters' supplies.

**Free Paint Book.**

**FILL OUT THIS COUPON** No. R. F.

Chicago House Wrecking Co., Chicago  
I saw your ad in the Green's Fruit Grower.  
I am interested in...  
Place an X in square opposite book you want sent free.

Building Mater-  
ial Book

Paint Book

Plan Book

Wire List

Iron Pipe

Acety. Lighting

Concrete Mach.

Name.....

Town.....

County.....

State..... R. F. D. .... P. O. Box....

**ANY OF THESE PRICE WRECKING BOOKS SENT ABSOLUTELY FREE!**

**PLAN BOOK**

Upwards of 100 medium price houses, barns and other designs shown. Each design represents beauty, utility, substantial construction and the lowest possible price.

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**CHICAGO HOUSE WRECKING CO., 35th and Iron Sts., CHICAGO.**